SLR-Z – 1

Seat No.	

B.Sc. – I (Semester – I) (ECS) (CGPA) Examination, 2016
Paper – I : ENGLISH – I (COMPULSORY)

Day and Date : Tuesday, 22-3-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.00 p.m.

N. B. *: 1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *indicate* ***full*** *marks.*

1. Rewrite the following sentences by choosing the correct alternative : **14**

1) The name of the policeman on the beat was _____
   a) Jimmy Wells b) Jimmy Porter
   c) Jimmy Wel d) Jimmy Pals

2) Twenty years ago, Jimmy and Bob dined at _____
   a) Big John Brady's Restaurant
   b) Big Boss Restaurant
   c) Big Joe Brady's Restaurant
   d) Big John Brandy's Restaurant

3) The writer and Miss Krishna _____
   a) Were at school together
   b) Met at an exhibition
   c) Met at a tea party
   d) Were neighbours

4) From what she tells the writer, it is clear that Miss Krishna's life with her mother was _____
   a) Miserable b) Comfortable
   c) Very happy d) Difficult

5) According to Binet, a psychologist who developed the _____ test.
   a) G. K. b) I. Q.
   c) S. T. S. d) S. T. I.

6) The word 'intelligence' is derived from the Latin word _____
   a) intellegere b) intellect
   c) intellectual d) none of the above

7) What does 'shining loads' mean ?
   a) an unmarried woman's wrist
   b) bunches of bangles
   c) the flame of a marriage fire
   d) sunlit corn

8) Where are the bangle sellers carrying their wares ?
   a) To a married woman's house
   b) To the house of a maiden woman
   c) To a temple fair
   d) To the streets

9) An Irish Airman Foresees His Death is written by _____
   a) W. B. Yeats b) W. B. Keats
   c) John Henry d) Sarojini Naidu

10) The Speaker in the poem 'An Irish Airman Foresees His Death' belongs to _____
   a) Switzerland b) Ireland
   c) Newzealand d) England

11) Salma is a _____ noun.
   a) Proper b) Common
   c) Collective d) None of the above

12) <u>They</u> are happy to see <u>her</u> dancing. The underlined word is _____
   a) Nouns b) Pronouns
   c) Prepositions d) Conjunctions

13) Prema is fond _____ dancing.
   a) of b) to
   c) on d) by

14) Anu is _____ Sania Mirza of our college.
   a) a b) the
   c) an d) no article

2. Answer **any seven** of the following questions in **two** or **three** sentences **each** : **14**
   1) What sort of relationship did Bob and Jimmy Share ?
   2) Why does Jimmy send another policeman to arrest Bob ?
   3) What is the meaning of the title 'Connoisseur' ?
   4) Why did the narrator consider Miss Krishna an annoying guest ?
   5) What are the many facets of intelligence ?
   6) What are the merits of artificial intelligence ?
   7) Which are the preferred colours for the bangles of a newly married woman ?
   8) Who is the Speaker in the poem 'An Irish Airman Foresees His Death' ?

3. A) Write short paragraphs on **any two** of the following : **8**
      1) My family.
      2) Solar energy.
      3) My favourite book.

   B) Answer **any three** of the following questions briefly : **6**
      1) What is the central idea of the poem 'Bangle Sellers' ?
      2) What is the Irish airman's attitude towards the war he is fighting in ?
      3) What are the myths regarding the intelligence of computers ?
      4) What do you understand of Miss Krishna's childhood from the story ?

4. Write an essay on **any one** of the following topics. **14**
   1) The role of women in the modern society.
   2) The benefits and drawbacks of mobile phones on the lives of young people in the present day.

5. Read the following passage carefully and make a note of it. **14**

   Everyone knows that taxation is necessary in a modern state : without it, it would not be possible to pay the soldiers and policemen who protect us ; nor the workers in government offices who look after our health, our food, our water and all other things that we cannot do for ourselves; nor also the ministers and members of parliament who govern the country for us. By means of taxation, we pay for things that we need just as much as we need somewhere to live and something to eat.

But though everyone knows that taxation is necessary, different people have different ideas about how taxation should be assigned. Should each person have to pay a certain amount of money to the government each year ? Or should there be a tax on things that people buy and sell ? If the first kind of taxation is used, should everyone pay the same tax, whether he is rich or poor ? If the second kind of tax is preferred, should everything be taxed equally ?

In most countries, a direct tax on persons, which is called income tax, exists. It is arranged in such a way that the poorest people pay nothing and the percentage of tax grows greater as the tax-payer's income grows. In England, for example, the tax on the richest people goes up as high as ninety-five percent !

But countries with direct taxation nearly always have indirect taxation too. Many things imported into the country have to pay taxes and duties. Of course, it is the men and women who buy these imported things in the shops who really have to pay the duties, in the form of higher prices. In some countries, 400, there is a tax on things sold in the shops. If the most necessary things are taxed, a lot of money is collected, but the poor people suffer most. If unnecessary things like jewels and fur coats are taxed, less money is obtained, but the tax is fairer, as the rich pay it. Probably this last kind of indirect tax, together with a direct tax on incomes which is low for the poor and high for the rich, is the best arrangement.

SLR-Z – 2

Seat No.	

B.Sc. (ECS) – I (Semester – I) Examination, 2016
(Paper – II) (CGPA)
COMPUTER FUNDAMENTALS & PROGRAMMING USING C – I

Day and Date : Wednesday, 23-3-2016 Total Marks : 70

Time : 10.30 a.m. to 1.00 p.m.

Instructions : *i)* ***All*** *questions are* ***compulsory****.*
ii) Figures to the ***right*** *indicate* ***full*** *marks.*
iii) Answer of ***two*** *sections should be written in* ***one*** *answer sheet.*

SECTION – I

(Computer Fundamentals)

1. Choose correct alternatives. **5**

   1) A byte consists of _____

      a) one bit b) two bit c) four bit d) eight bit

   2) EBCDIC is an _____ code.

      a) 6-bit code b) 7-bit c) 8-bit d) none

   3) _____ Command is used to open the file in a DOS.

      a) open b) type c) start d) new

   4) The second generation were developed during _____

      a) 1949 to 1955 b) 1956 to 1965 c) 1965 to 1970 d) none of these

   5) Which of the following is not hardware ?

      a) magnetic tape b) printer

      c) VDU terminal d) assembler

2. Solve **any five** of the following : **10**

   1) State any two external and internal DOS command.

   2) Give long form SMPS & OMR.

3) Define Software.

4) Write the function of operating system.

5) Write the advantage of assembly language.

6) What are the input devices ?

7) Define programming language.

3. A) Write short note on **any two** of the following : **10**

1) Explain the types of Computer.

2) What are primary storage devices ?

3) Explain printing mechanism for DOT matrix printer.

B) Answer **any one** of the following : **10**

1) Explain the generation of computer in detail.

2) Draw the block diagram of computer and explain all these units.

SECTION – II

(Programming Using C – I)

1. Choose correct alternatives. **5**

1) Which of the following is not relational operator _____

a) ! b) ! = c) > = d) <

2) Multiway selection is possible through _____ Statement.

a) conditional b) sequential c) compound d) switch

3) _____ pictorial representation of algorithm.

a) function b) array c) pseudocode d) flowchart

4) _____ are used to abort the block.

a) continue b) break c) goto d) label

5) Void is not a system keyword.

a) True b) False

2. Solve **any five** of the following : **10**

1) State any four data types in C.

2) Define variables and constant.

3) What are the rules regarding to declaring variable name ?

4) Write the syntax of scanf () function.

5) Write the algorithm to calculate the simple interest.

6) Write program structure in C.

7) What are the purpose of goto statement ?

3. A) Write short note on **any two** of the following : **10**

1) Explain the symbols to draw a flowchart.

2) Explain history of c language in brief.

3) Explain for loop with example.

B) Answer **any one** of the following : **10**

1) Explain the types of array with example.

2) Write a program in C –

a) to calculate the large number between two numbers.

b) to calculate the factorial of given number.

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Seat No.	

B.Sc. (ECS) – I (Semester – I) (CGPA Pattern) Examination, 2016

ELECTRONICS (Paper – III)
Linear and Digital Electronics – I

Day and Date : Saturday, 26-3-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.00 p.m.

SECTION – I
(Linear)

1. Multiple Choice Questions : **5**

   1) Which of the following capacitors can have the highest capacitance value ?
      a) Mica b) Paper c) Ceramic d) Electrolytic

   2) A silicon PN junction in forward conduction has a voltage drop closer to _____
      a) 0.3 V b) 0.7 V c) 1.7 V d) 7 V

   3) In case of bipolar transistor, α is _____
      a) Positive and > 1 b) Positive and < 1
      c) Negative and > 1 d) Negative and < 1

   4) The process of adding impurities of pure semiconductor is called _____
      a) Mixing b) Doping c) Diffusing d) Refining

   5) The mains supply used for residential purpose has a frequency of 50 Hz, its period is _____
      a) 0.02 sec b) 0.2 sec c) 2 sec d) 20 sec

2. Answer **any five** of the following : **10**

   1) State Thevenin's theorem.
   2) What is meant by rectifier ? Give the types.
   3) What is resistor ? Give the classification of it.
   4) Draw the diagram of LC and RC circuit.
   5) What do you mean by BJT ?
   6) Define the terms with example : semiconductor and insulator.
   7) Give the applications of diode.

P.T.O.

3. A) Write a short note on **any two** of the following : **10**
   1) Explain step up and step down transformer.
   2) Explain full wave rectifier.
   3) Give the relation between α and β.

   B) Answer **any one** of the following : **10**
   1) What is diode ? Explain forward and reverse biased characteristics of PN junction diode.
   2) Explain construction and working of carbon composition and wire wound resistors.

SECTION – II
(Digital Electronics – I)

1. Multiple Choice Questions : **5**

   i) NAND gate means _____
   a) Inverter followed by AND gate
   b) AND gate followed by inverter
   c) AND gate followed by OR gate
   d) None of these

   ii) (A + B) + C = _____
   a) A (B + C)
   b) A + (B + C)
   c) A + (BC)
   d) AB + AC

   iii) $(95)10 = (?)_{16}$
   a) 5F
   b) F5
   c) E5
   d) F4

   iv) IC _____ is a 16:1 multiplexer.
   a) 74148
   b) 74138
   c) 74154
   d) 74150

   v) In K amp quad eliminates _____ variables.
   a) 1
   b) 2
   c) 3
   d) 4

2. Answer **any five** of the following : **10**

1) Define logic gate ? Give examples of universal gates.

2) Draw AND gate by using NOR gate.

3) What is meant by 1's and 2's complement ?

4) Explain working of half subtractor.

5) What is K map ? Give the structure of 4 variables K map.

6) Perform :

i) $(645)_8 = (?)_2$

ii) $(ADF)_{16} = (?)_2$

7) What is meant by encoder ?

3. A) Write a short note on **any two** of the following : **10**

i) Explain Universal adder/subtractor.

ii) Execute the following conversion :

a) $(110.111)_2 = (?)_{10}$

b) $(01010011)_2 = (?)_{BCD}$

c) $(1011)_2 = (?)_{gray}$

d) $(250)_{10} = (?)_{16}$

e) $(0.42)_{10} = (?)_2$

iii) Explain AND, OR, NOT, NOR, EXOR gates with the help of truth table.

B) Answer **any one** of the following : **10**

1) Write a note on parity check techniques ? Construct the Hamming code for data 1011 with Odd parity.

2) Define multiplexer and demultiplexer. Explain 16:1 multiplexer with neat diagram and truth table.

SLR-Z – 4

Seat No.	

B.Sc. (ECS) – I (Semester – I) (CGPA Pattern) Examination, 2016
MATHEMATICS (Paper – IV)
Graph Theory and Numerical Methods

Day and Date : Monday, 28-3-2016 Max. Marks : 70

Time : 10.30 a.m. to 1.00 p.m.

N.B. : *1)* ***All*** *questions are* ***compulsory****.*

2) ***Use*** *of scientific calculators are* ***allowed****.*

3) Figures to the ***right*** *indicate* ***full*** *marks.*

SECTION – I

(Graph Theory)

1. Choose the correct alternative for **each** of following. **5**

1) A graph which does not contain any loop and multiple edges is called as _____ graph.

a) multiple b) self

c) complete d) simple

2) The number of edges in a graph with 8 vertices each of degree 4

a) 16 b) 4

c) 8 d) 32

3) A graph is called as _____ if it is isomorphic with its own complement.

a) isomorphic graph

b) complement graph

c) self complementary

d) none of these

4) A single vertex is a path of length

a) zero b) one

c) two d) none of these

5) A vertex of degree zero is known as

a) Pendant vertex b) Null vertex

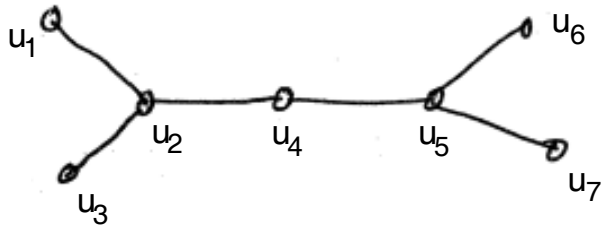
c) Zero vertex d) Isolated vertex

2. Attempt **any five** from following. **10**

1) Define ring sum of graph.

2) Define complement of graph.

3) Find centre of the following tree.



4) Define Hamiltonian graph.

5) Find the number of edges in complete graph with 10 vertices.

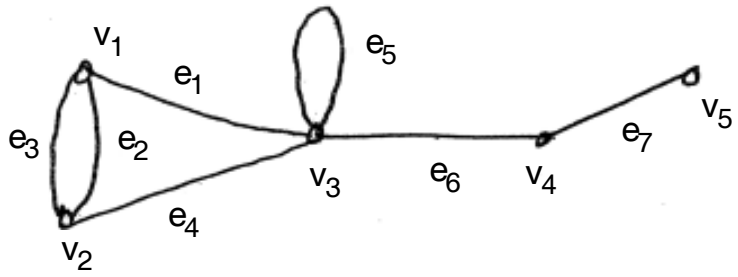
6) Draw multigraph corresponding to the matrix

$$A(G) = \begin{bmatrix} 1 & 1 & 1 & 2 \\ 1 & 0 & 0 & 0 \\ 1 & 0 & 0 & 2 \\ 2 & 0 & 2 & 2 \end{bmatrix}_{4\times4}$$

7) Define complete graph. Give an example.

3. A) Attempt **any two** of the following : **10**

1) Consider the graph G



Draw the following graphs

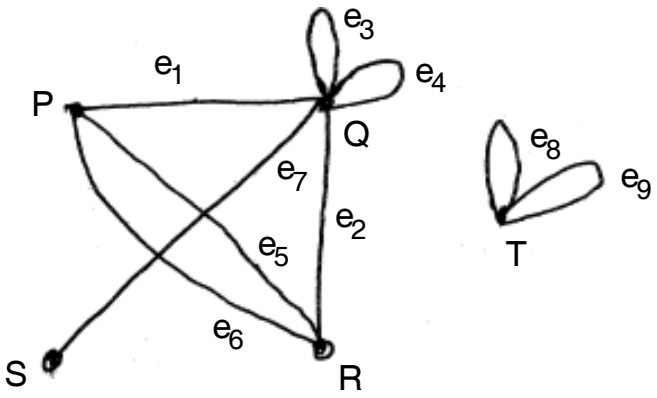
a) $G - V_1$

b) If $H = \{v_1, v_2, v_5\}$ then draw $G - H$

c) If $F = \{e_1, e_2, e_5\}$ then draw $G - F$

2) Write note on Koningsber's seven bridge problem.

3) Write Adjancency Matrix A(G) and Incidence Matrix I(G) of following graph.



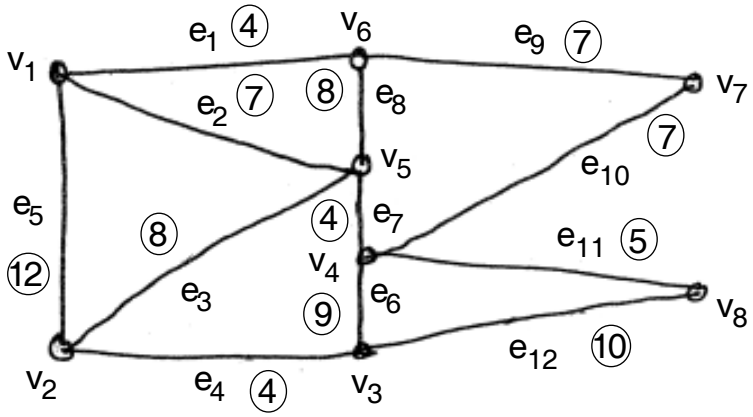
B) Attempt **any one** of the following : **10**

1) Define :

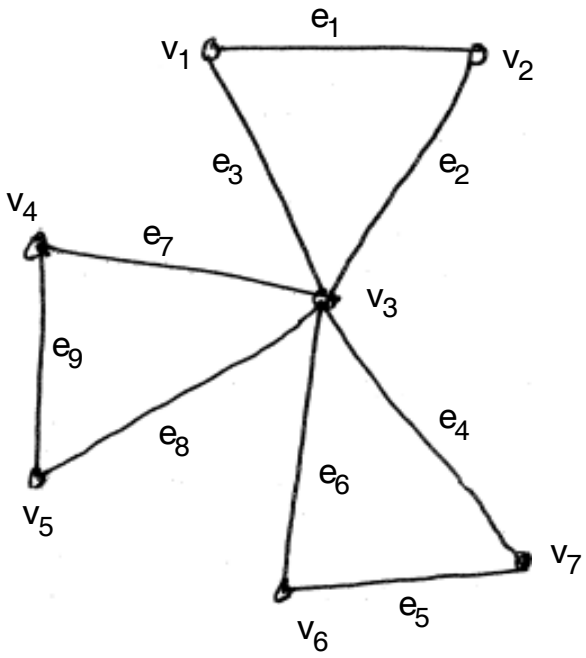
a) Spanning tree

b) Binary tree.

Using Kruskal's Algorithm find shortest spanning tree of following graph.



2) Define Eulerian circuit and Euler graph. Use Fleury's algorithm to trace an Eulerian circuit for following graph.



SECTION – II

(Numerical Methods)

1. Choose the correct alternatives. **5**

1) Simpson's $\frac{1}{3}^{rd}$ rule is obtain by putting n = _____ in general quadrature formula.

a) 1 b) 2

c) 3 d) 4

2) $E^n f(x)$ =

a) f(a + x) b) f(x – nh)

c) f(x + nh) d) f(x – h)

3) Which of the following relation is true ?

a) $E^{-1} = 1 + \Delta$

b) $E = 1 + \Delta$

c) $E = 1 - \Delta$

d) $E = \Delta - 1$

4) $0.4399\ E_{-2} \times 0.5789\ E_{-12}$ =

a) $0.2547\ E_{-2}$

b) $0.2547\ E_{-14}$

c) $0.2547\ E_{22}$

d) $02547\ E_3$

5) The equation $xe^x + \cos x = 0$ is called as

a) polynomial

b) differential

c) algebric

d) transcendental

2. Attempt **any five** from following. **10**

1) Find interval in which root of equation $x^3 - 3x + 4 = 0$ lies.

2) Write augmented matrix for following system of linear equations.

$x - 2y + z = -5,\ -3x - 4y + 7z = 9,\ 2x - 4y = 11$

3) Write Simpson's $\frac{1}{3}^{rd}$ rule.

4) Prepare forward difference table form the data given below.

x :	2	4	6	8	10
f(x) :	5	17	37	65	101

5) State the formula for k_3 and k_4 in Runge Kutta 2^{nd} order method.

6) Write Newton Rapson's method formula to find $(n+1)^{th}$ approximation for the value of the root.

7) Find value of $0.9732\ E_4 + 0.6329\ E_5$. Write your answer in normalised floting point form.

3. A) Attempt **any two** of the following : **10**

1) Obtain A^{-1} by using row reduction, if exist

$$A = \begin{bmatrix} 1 & 3 & 3 \\ 1 & 4 & 3 \\ 1 & 3 & 4 \end{bmatrix}$$

2) Find real root of equation $x^3 - 2x - 5 = 0$ by using bisection method, perform only three interactions.

3) Given that, $f(1) = 3$, $f(2) = 7$, $f(5) = 31$ use Lagrange's interpolation formula to estimate $f(4)$.

B) Attempt **any one** of the following : **10**

1) Evaluate $\int_0^{10} x^2 dx$ by

a) Trapezoidal rule

b) Simpson's $\frac{3}{8}^{th}$ rule by dividing interval [0, 10] into 10 equal subintervals.

2) Write Newton's forward difference interpolation formula from following data estimate 1) f(8) 2) f(9) by Newton's forward difference interpolation formula.

x	5	10	15	20
f(x)	50	70	100	145

SLR-Z – 5

Seat No.	

B.Sc. (E.C.S.) – I (Semester – I) (CGPA Pattern) Examination, 2016
STATISTICS (Paper – V)
Descriptive Statistics and Probability Theory – I

Day and Date : Tuesday, 29-3-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.00 p.m.

N.B. : *i)* ***All*** *questions are* ***compulsory.***
ii) Figures to ***right*** *indicates* ***full*** *marks.*
iii) ***Use*** *of any type of calculator is* ***allowed****.*
iv) Graph paper will be supplied on ***request****.*

SECTION – I

(Descriptive Statistics)

1. Choose most correct alternative : **5**

1) _____ is a sampling method, in which every unit in the population has equal probability of being selected in the sample.
   a) SRS b) Stratified
   c) Systematic d) All of these

2) A number showing how many times a particular item repeated in the data is a _____ of that item.
   a) Frequency b) Relative frequency
   c) l.c.f d) g.c.f

3) _____ is a measures of central tendency that attached by extreme observations.
   a) Median b) Mode
   c) A. M. d) All of these

4) If C.V. of group-A < c.v. of group-B, then _____
   a) group-A is more homogeneous b) group-A is heterogenous
   c) group-B is more homogeneous d) none of these

5) If $Q_2 - Q_1 = Q_3 - Q_2$, then frequency distribution is _____
   a) + vely skewed b) – vely skewed
   c) symmetric d) none of these

2. Attempt **any five** : **10**

1) Define classification.
2) Define A.M.
3) State any two limitations of Census method.
4) Find median for the values – 40, 38, 36, 29, 32, 25, 22, 20.
5) Given : A.M. = 50, Mode = AO, Comment on skewness of the distribution.
6) Given n = 25, $\sum X = 50$, $\sum X^2 = 255$, find S.D.
7) The first 3 moments about point 4 are 3, 15 and 300. Find μ_3.

3. A) Attempt **any two** : **10**

1) Define population, sample. State advantages of sampling over census method.
2) Define Range, coefficient of Range. State merits and demerits of Range.
3) The A. M. of wages of all employees is Rs. 5,000 per week. The A.m. of wages of male and female employees were Rs. 5,300 and Rs. 4,800 per week respectively. Find ratio of male and female employees.

B) Attempt **any one** : **10**

1) Write a note on construction of Ogives and explain how to determine median by using Ogives.
2) Find missing frequency of a class 54 – 72, of median of distribution is 65.

Class :	0 – 18	18 – 36	36 – 54	54 – 72	72 – 90	90 – 108
Frequency :	4	6	12	–	14	9

Class :	108 – 126	126 – 144
Frequency :	3	1

SECTION – II

(Probability Theory – I)

4. Choose the correct alternative : **5**

i) If $X \rightarrow B(n : p)$ then _____

a) Mean = Variance
b) Mean < Variance
c) Mean > Variance
d) Mean $\leq$ Variance

ii) If $Y = \frac{X-2}{5}$ and E(Y) = 3. Then E(X) = _____

a) 17
b) $\frac{1}{5}$
c) $\frac{5}{17}$
d) $\frac{17}{5}$

iii) If X and Y denotes numbers on uppermost faces when two fair dice are thrown together then P(X = Y) = _____

a) $\frac{3}{36}$
b) $\frac{6}{36}$
c) $\frac{12}{36}$
d) $\frac{1}{36}$

iv) If A and B are independent events with P(A) = 0.50 and P(B) = 0.25 then $P(A \cup B)$ = _____

a) 0.625
b) 0.55
c) 1
d) 0.75

v) If five seeds are planted and total number of seeds germinated are recorded after a week then sample space is _____

a) (0, 5)
b) {0, 1, 2, 3, 4, 5}
c) {1, 2, 3, 4, 5}
d) None of these

5. Solve **any five** : **10**

   1) Define addition principle of counting.
   2) Define impossible events with illustration.
   3) Define conditional probability of A given B.
   4) Define Poisson distribution.
   5) Find value of n if ${}^{n}C_{8} = {}^{n}C_{7}$.
   6) Given P(A) = 0.5; P(B) = 0.6 and $P(A \cup B) = 0.85$. Find $P(A \cap B)$.
   7) If $X \rightarrow B(n; P = 0.4)$ and mean of r.v.X. is 12 then find value of n.

6. A) Solve **any two** : **10**

   1) Define classical definition of probability and show that $P(\overline{A}) = 1 - P(A)$.
   2) Find value of X if ${}^{14}C_{2} + {}^{14}C_{3} + {}^{15}C_{4} + {}^{16}C_{5} + {}^{17}C_{6} = {}^{18}C_{X}$.
   3) If $X \rightarrow B(n=6; P)$. Find value of P such that, P(X = 4) = P(X = 2).

   B) Solve **any one** : **10**

   a) i) Define mathematical expectation and variance of discrete r.v.X.

   ii) For the following probability distribution of r.v.X.

X	0	1	2	3	4
P(X)	K	3K	5K	2K	K

   Find value of K and $P(X \geq 2)$.

   b) i) Define distribution function of r.v.X. and state any three properties of it.

   ii) The average number of misprints per page of a book is 1.5. Assuming the distribution of number of misprints to be Poisson, find the probability that a particular book is free from misprints ?

SLR-Z – 6

Seat No.	

B.Sc. – I (ECS) (Semester – II) (CGPA Pattern) Examination, 2016
ENGLISH – II (Compulsory) (Paper – I)

Day and Date : Thursday, 31-3-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.00 p.m.

N.B. *: 1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *indicate* ***full*** *marks.*

1. Rewrite the following sentences by choosing correct alternative given below **each** : **14**

1) The Parliament of Religions was to be held in _____
   a) America b) Singapore
   c) Canada d) South Africa

2) _____ is not passed by Swami Vivekananda travelling to America.
   a) Ceylon b) Singapore
   c) Penang d) Australia

3) Jain was represented by _____
   a) Vivekananda b) Chakravarthi
   c) Gandhi d) Annie Besant

4) 'The world's most dangerous animal.' Inside the cage there is no animal but a _____
   a) Nothing b) Man c) Mirror d) None

5) The main reason of the serious economics problems of the majority is _____
   a) Famine b) Negligence
   c) Ignorance d) All

6) Wernher Von Braun was _____ scientist who produced Jupiter missile.
   a) an American b) a Russian
   c) a Roman d) a German

P.T.O.

7) Brahma is a _____ Deity.
   a) Hindu b) German c) American d) Japanese

8) The poem 'Full Moon' is written by _____
   a) Kamala Das b) Robert Hayden
   c) Nani Palkhivala d) Toru Dutta

9) Today the moon is merely an attraction for _____
   a) the poets b) the children
   c) the scientists d) the lovers

10) Keats takes apostrophe _____
   a) Keats' b) Keat's c) Keats's d) All

11) She took _____ laptop. (belong to Gita)
   a) Gitas' b) Gita's c) Both d) None

12) Pune is _____ to my village than Nagpur.
   a) big b) bigger c) biggest d) all

13) Die and dye are the examples of _____
   a) Homonyms b) Homophones
   c) Homographs d) Synonym

14) _____ is the antonym of literate.
   a) Illiterate b) Semiliterate
   c) Aliterate d) Hyperliterate

2. Answer **any seven** of the following questions in **two** or **three** sentences : **14**

1) What is Dr. Kalam's opinion of Wernher von Braun ?
2) What had Dr. Kalam tested successfully in France ?
3) When did Swami Vivekananda Left Bombay for ?
4) What is human rights summed up ?
5) What are the primary ideas of human rights ?

6) Who were the Indians to represent various religions ?

7) Who wrote 'Brahma' ?

8) Which poem refers the garden of Gethsemane ?

3. A) Write short answers on **any two** of the following : **8**

1) What do you learn of Dr. Kalam's dedication to team work through the essay "work brings solace" ?

2) What is the history of human rights in the world ?

3) Describe the appearance of Swami Vivekananda.

B) Answer **any two** of the following briefly : **6**

1) What is an agenda ?

2) What is CC ?

3) What should be avoided in C.V. ?

4. Write a suitable C.V. for the post of secondary school teacher. **14**

OR

Write a notice, agenda and minutes for college gathering meeting.

5. Write an e-mail application letter for an accountant. **14**

SLR-Z – 7

Seat No.	

B.Sc. (ECS) – I (Semester – II) (CGPA Pattern) Examination, 2016
COMPUTER FUNDAMENTALS AND PROGRAMMING USING 'C' – II
(Paper – II)

Day and Date : Friday, 1-4-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.00 p.m.

N.B. : *1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *place indicate* ***full*** *marks.*

SECTION – I

(Computer Fundamentals)

1. Choose correct alternatives : **5**

   1) Default extension of MS-Word file is
      A) .txt B) .text C) .doc D) None of these

   2) _____ communication allows data flow in both direction at same time.
      A) Half-duplex B) Full duplex C) Simplex D) None of these

   3) A device in network that provides resources to other networked devices is called
      A) client B) server C) host D) none of these

   4) The bar at the bottom of a window that holds no. of application is known as
      A) title bar B) task bar C) menu bar D) status bar

   5) To insert image <insert> tag is used
      A) True B) False

2. Attempt **any five** from following : **(5×2=10)**

   1) List the components of control panel.
   2) Define singular tag with example.
   3) Define multitasking.

P.T.O.

4) Define word processor.

5) What is Hyper Link ?

6) Explain the term 'Spreadsheet'.

3. A) Answer **any two** of the following : **10**

1) What is Multiprocessing ? Explain its types.

2) Explain the features of MS-Word.

3) Explain the different of goals of network.

B) Answer **any one** of the following : **10**

1) What is topology ? Explain different topologies with advantages and disadvantages.

2) Explain table tag and frameset tag with its attributes and example.

SECTION – II

(Programming using 'C' – II)

1. Choose correct alternatives : **5**

1) The default value of static variable is

a) zero b) one c) garbage d) none of these

2) What will be the output of following program ?

```
void func();
void main()
{
      func();
      func();
}
void fun()
{
      static int i = 10;
      printf("%d",i);
      i++;
}
```

a) error b) 10 11 c) 10 10 d) none of these

3) Data members of structure cannot initialize inside structure definition.
   a) True b) False

4) fprintf() accepts _____ arguments.
   a) 1 b) 2 c) 3 d) none of these

5) Structure in which one of the members is a pointer which points to structure itself is called
   a) structure b) union
   c) self-referential structure d) pointer to structure

2. Answer **any five** of the following : **10**
   1) What is difference between auto and static ?
   2) Define :
      a) actual parameter
      b) formal parameter
   3) What is pointer ? How pointer is declared ?
   4) Give the syntax for macro declaration.
   5) Why there is need of sizeof() operator ? Give one example.
   6) What is difference between putchar() and putch() ?

3. A) Solve **any two** of the following : **10**
   1) What is difference between call by value and call by reference with example ?
   2) Explain storage classes in detail.
   3) Explain file opening modes in detail.

   B) Solve **any one** of the following : **10**
   1) Why preprocessor directives are used ? Explain preprocessor directives with its type.
   2) What is structure ? How structure is passing to function explain with passing methods.

_____

SLR-Z – 8

Seat No.	

B.Sc. (E.C.S.) – I (Semester – II) (CGPA) Examination, 2016
Paper – III : LINEAR AND DIGITAL ELECTRONICS – II

Day and Date : Saturday, 2-4-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.00 p.m.

N.B. *: 1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right place*** *indicate* ***full*** *marks.*

SECTION – I
(Linear)

1. Choose correct alternatives : **5**

   1) The over all phase shift of the closed loop system is _____ degree.
      a) 0 b) 90
      c) 180 d) 360

   2) In _____ amplifier the Q point is at the centre of the load line.
      a) Class A b) Class B
      c) Class AB d) Class C

   3) A FET is a _____ controlled device.
      a) Current b) Voltage
      c) Resistance d) Inductance

   4) In Hartely oscillator the feedback network consist of _____ tank circuit.
      a) LC b) RC
      c) LR d) None of these

   5) The Op Amp IC 741 is a _____ pin IC.
      a) 8 b) 14
      c) 16 d) 20

2. Answer **any five** of the followings : **10**

   1) Explain Op Amp as a differentiator.
   2) Explain Barkhosuen criteria.
   3) State parameters of JFET.

P.T.O.

4) Explain virtual ground concept.

5) Explain Op Amp as adder.

6) Give applications of MOSFET.

7) Give application of amplifier.

3. A) Attempt **any two** of the followings : **10**

1) Explain AMVT by using IC 555.

2) Explain O/P characteristics of JFET.

3) Explain CE amplifier with response curve.

B) Attempt **any one** of the followings : **10**

1) Define oscillator. Explain phase shift and Colpitt's oscillator by using transistor.

2) Define amplifier. Explain different types of amplifier by using coupling methods.

SECTION – II
(Digital Electronics – II)

1. Choose correct alternatives : **5**

1) A _____ ADC is fastest ADC to at all.

a) Flash b) Counter

c) Tracking d) SAR

2) _____ counter is faster in speed of operation.

a) Ripple b) Parallel

c) IC 9490 d) None of these

3) ROM is _____ memory.

a) Permanent b) Temporary

c) Virtual d) None of these

4) D flip flop require _____ inputs.

a) 1 b) 2

c) 3 d) 4

5) Memory size indicate in _____

a) GB b) KHz

c) Ohm d) None of these

2. Answer **any five** of the followings : **10**

   1) Explain working of T flip flop.

   2) Give specification of ADC.

   3) Write a note on PROM.

   4) Give parameters of memory.

   5) Explain ring counter.

   6) Explain ROM.

   7) Give application of DAC.

3. A) Attempt **any two** of the followings : **10**

      1) Explain RS flip flop by using NAND gate.

      2) Explain binary weighted ladder network.

      3) Write a note on SAR type ADC.

   B) Attempt **any one** of the followings : **10**

      1) Define counter. Explain 3 bit asynchronous up and down counter.

      2) Define ADC. Explain flash and dual slope type ADC.

SLR-Z – 9

Seat No.	

B.Sc. (ECS) – I (Semester – II) (CGPA Pattern) Examination, 2016
MATHEMATICS (Paper – IV)
Algebra and Operations Research

Day and Date : Monday, 4-4-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.00 p.m.

N.B. *: 1)* ***All*** *questions are* ***compulsory****.*
2) Use of scientific calculator is ***allowed.***
3) Figures to the ***right*** *indicate* ***full*** *marks.*
4) To draw the graphs (if ***necessary****) the graph paper will be provided on* ***request.***

SECTION – I

(Algebra)

1. Choose the correct alternative. **5**

   1) If aRb and bRa $\Rightarrow$ a = b, where a, b$\in$ A then relation R is called as _____ relation defined on set A.
      a) symmetric b) antisymmetric
      c) asymmetric d) pure

   2) If $a * e = e * a = e$, then the element 'e' is called as _____ element w.r.t. the binary operation $*$.
      a) identity b) inverse c) unique d) converse

   3) Conjunction of the statements p and q is true if and only if _____
      a) at least one of p and q is true b) both of p and q are true
      c) both of p and q are false d) none of these

   4) If f (a) = f (b) implies that a = b then the function f : A $\rightarrow$ B is called as _____ function, where a, b$\in$ A.
      a) one-one b) onto c) surjective d) both b and c

   5) The real part of complex number – 3 i is _____
      a) 3 b) – 3 c) – 3 i d) 0

2. Attempt **any five** of the following. **10**

   1) Define symmetric relation.

   2) Prepare truth table for compound statement $p \rightarrow q$ and $q \rightarrow p$.

P.T.O.

3) Define bijective function.

4) If A = {1, 2, 3, 4} and B = {a, b} then find A×B and B×A.

5) If $z_1 = 2 + 5i$ and $z_2 = 4 + 3i$ then find $z_1 + z_2$ and write it's real and imaginary part.

6) Let A = {p, q, r}. Let R be the relation on A given by R = {(p, p) (p, r) (q, q) (q, p) (r, p)}. Draw digraph of relation R.

7) If $f(x) = x^2 + 2x - 1$ then find f (2x) and f (– x).

3. A) Attempt **any two** of the following. **10**

1) Let $z = \left(\frac{3+4i}{2-3i}\right)^2$. Then find real part of z and imaginary part of z.

2) Test the validity of the following argument by using truth table.

$p \rightarrow \sim q, \sim p, p \leftrightarrow q, \sim q \vdash p \vee q$.

3) Let $*$ be the binary operation defined on set A = {x, y, z, p, q} given by the following multiplication table.

*	x	y	z	p	q
x	z	p	q	x	y
y	p	q	x	y	z
z	q	x	y	z	p
p	x	y	z	p	q
q	y	z	p	q	x

Then find i) $[(x * p) * (q * y)] * z$.

ii) Is $*$ commutative ?

iii) Find identity element w.r.t. $*$ if exists.

iv) Find inverse of each element of A w.r.t. $*$.

3. B) Attempt **any one** of the following. **10**

1) Define transitive closure of relation R. Hence find transitive closure of relation R = {(1, 1), (1, 3), (1, 4), (2, 3), (3, 2), (3, 3), (4, 3), (4, 4)} defined on the set A = {1, 2, 3, 4} by using Harshall's algorithm.

2) Define complex conjugate of a complex number. Let $z_1 = a + ib$ and $z_2 = c + id$ be any two complex numbers then prove that

i) $\overline{z_1 + z_2} = \overline{z_1} + \overline{z_2}$

ii) $\overline{z_1 . z_2} = \overline{z_1} . \overline{z_2}$.

SECTION – II

(Operations Research)

1. Choose the correct alternative. **5**

   1) The coefficient of artificial variable in the objective function of LPP of maximisation type is _____

      a) + M b) – M c) 0 d) – 1

   2) In a T.P. opportunity cost for occupied cell is _____

      a) 1 b) 0 c) negative d) none of these

   3) _____ method is used to find solution of A. P.

      a) North-West corner b) Eulerian
      c) Hamiltonian d) Hungerian

   4) In the standard form of LPP, all constraints are of _____ type, except non-negative constraints.

      a) equal to b) $\leq$ c) $\geq$ d) optimise

   5) In the optimality test of T.P. if all dij $\geq$ 0 with atleast one dij = 0 then the solution under test is _____

      a) optimum solution b) initial solution
      c) alternate optimum solution d) none of these

2. Attempt **any five** of the following. **10**

   1) Define non degenerate solution of a T.P.

   2) Write standard form of the following LPP

      Maximise $z = 3x + 4y + 5z$ subject to

      $x + y + z \leq 4$;

      $2x – y + 3z \leq 5$;

      $x, y \geq 0$.

   3) Define balanced A.P.

   4) Write the formulae to find index numbers for occupied cells and opportunity cost for un-occupied cell.

   5) Define surplus variable.

   6) How the A.P. of maximise type, can be converted into minimise type ?

   7) Write the names of methods to find IBFS of a T.P. and the method to find optimum solution of T.P.

3. A) Attempt **any two** of the following. **10**

1) Find IBFS of the following T.P. by using least cost method.

	W_1	W_2	W_3	W_4	Capacity
F_1	5	2	4	3	22
F_2	4	8	1	6	15
F_3	4	6	7	5	18
Demand	7	12	17	19	55

2) Solve the following A.P. to minimise the total assignment cost.

	A	B	C	D	E
I	9	3	1	13	1
II	1	17	13	20	5
III	0	14	8	11	4
IV	19	3	0	5	5
V	12	8	1	6	2

3) Solve the following LPP by using Graphical Method.
Minimise $z = 3x + 2y$ subject to the constraints $5x + 2y \geq 10$; $2x + 2y \geq 12$; $x + 4y \geq 12$; $x, y \geq 0$.

B) Attempt **any one** of the following. **10**

1) Solve the following A.P. to maximise the total profit.

	I	II	III	IV
P	42	35	28	21
Q	30	25	20	15
R	30	25	20	15
S	24	20	16	12

2) Find IBFS by using VAM and optimum solution by using MODI of the following T.P.

Destination / Origin	D_1	D_2	D_3	D_4	Capacity
O_1	90	90	100	100	200
O_2	50	70	130	85	100
Demand	75	100	100	30	

SLR-Z – 10

Seat No.	

B.Sc. (E.C.S.) (Part – I) (Semester – II) (CGPA Pattern) Examination, 2016
STATISTICS
Descriptive Statistics and Probability Theory – II (Paper – V)

Day and Date : Tuesday, 5-4-2016 Max. Marks : 70

Time : 10.30 a.m. to 1.00 p.m.

Instructions : *i) Figures to the **right** indicate **full** marks.*
*ii) Use of **any** type of calculator is **allowed**.*

SECTION – I (**Descriptive Statistics**)

1. Select most correct alternative : **5**

i) If correlation coefficient is 0.5 and one regression coefficient is 0.25 then the other regression coefficient must be

a) 1.25 b) 1 c) 0.5 d) 0.25

ii) In a multivariate study, the correlation between any two variables eliminating the effect of all other variables is called

a) simple correlation b) multiple correlation

c) partial correlation d) partial regression

iii) A lock-out in a factory for a month is associated with the component of a time series

a) cyclical variation b) seasonal variation

c) irregular variation d) long-term variation

iv) Moving average method is a method of measuring

a) trend b) irregular variations

c) seasonal variations d) cyclical variations

v) If the correlation coefficient between X and Y is – 0.8, then the correlation coefficient between X –2 and 3Y is

a) 0.8 b) – 0.24 c) 0.16 d) none of these

P.T.O.

2. Answer **any five** of the following : **10**

i) Define correlation.

ii) Define an index number.

iii) Given $r_{12} = 0.6$, $r_3 = 0.5$ and $r_{23} = 0.8$, find $R_{2.13}$.

iv) If $3y + 2x = 10$ is the line of regression of Y on X, find regression coefficient of it.

v) Define a Time Series.

vi) Construct a price index number by suitable formula if you are given

$\sum p_0q_1 = 600$ and $\sum p_1q_1 = 900$.

vii) What is a seasonal variation ?

3. A) Attempt **any two** of the following : **10**

i) From a bivariate distribution a sample of 40 observations gives following results :

$\sum X = 628$ $\sum Y = 550$ $\sum X^2 = 40376$ $\sum XY = 33969$

Find a line of regression of Y on X.

ii) Calculate correlation coefficient between the ranks of X and Y from the following data :

X	10.2	15.4	20	25	28.5
Y	10	18	16	24	20

iii) Explain moving average method of estimating trend.

B) Attempt **any one** of the following : **10**

i) Find the plane of regression of X_2 on X_1 and X_3 form the following results :

$\overline{X}_1 = 15.9$ $\overline{X}_2 = 3.67$ $\overline{X}_3 = 5.79$

$\sigma_1 = 1.71$ $\sigma_2 = 1.29$ $\sigma_3 = 3.09$

$r_{12} = -0.66$ $r_{23} = 0.60$ $r_{13} = -0.13$

Estimate X_2 when $X_1 = 17$ and $X_3 = 7$.

ii) Construct Laspeyre's, Paasche's and Fisher's Price and Quantity index numbers for the year 2006 from the following data :

Commodity	2004		2006	
	Price	Quantity	Price	Quantity
A	6	50	10	56
B	2	100	2	120
C	10	30	12	24
D	8	20	12	36

SECTION – II (**Probability Theory – II**)

1. Select most correct alternative : **5**

i) Two random variables X and Y are said to be independent if

a) E(XY) = 1 b) E(XY) = 0

c) E(XY) = E(X) E(Y) d) E(XY) = any constant value

ii) If the p.d.f. of a continuous random variable x is f(X) = 1; 0 < x < 1 then E(X) is

a) – 1 b) 0 c) 0.5 d) 1

iii) If a continuous random variable X follows exponential distribution with mean 4 then its variance is

a) 16 b) 4 c) 2 d) 0.25

iv) Whether the test is one sided or two sided depends on

a) composite hypothesis

b) alternative hypothesis

c) null hypothesis

d) simple hypothesis

v) Area of the critical region depends on

a) value of the statistic b) number of observations

c) size of type I error d) size of type II error

2. Answer **any five** of the following : **10**

i) Define joint probability mass function of the bivariate discrete r.v. (X, Y).

ii) Define the probability density function of continuous r.v. X.

iii) Find the E(X) if the p.d.f. of a r.v. X is given by

$$f(x) = \begin{cases} e^{-x}, & x > 0 \\ 0, & \text{otherwise} \end{cases}$$

iv) Define a null hypothesis.

v) Define a parameter and a statistic.

vi) Define continuous uniform distribution.

vii) Define expectation of a continuous r. v. X.

3. A) Attempt **any two** of the following : **10**

i) The joint p.m.f. of a bivariate r.v. (X, Y) is given by

$P(x, y) = k(5x + 3y)$; $x = 1, 2, 3$ $y = 0, 1, 2$

Find the value of k and $P(X \leq 2, Y \geq 1)$

ii) Define normal distribution. State any four properties of it.

iii) Define cumulative distribution function of a continuous random variable X and state any four properties of it.

B) Attempt **any one** of the following : **10**

i) In a random sample of 1000 people in Solapur 540 are consumers of rice and rest are consumers of wheat. Can we assume that both rice and wheat consumers are equal in proportion ? Test at 1% level of significance.
Given : $Z_{0.005} = 2.58$.

ii) A random sample of 100 cigarettes of a certain brand gives the average nicotine content 27 mg with a standard deviation of 8 mg. Test whether the average nicotine content of the cigarettes is 30 mg at 5% level of significance.

Given :$Z_{0.025} = 1.96$.

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SLR-Z – 11

Seat No.	

B.Sc. (ECS) II (Semester – III) (New – CGPA) Examination, 2016
Paper – I : OPERATING SYSTEM

Day and Date : Wednesday, 6-4-2016 Max. Marks : 70

Time : 2.30 p.m. to 5.00 p.m.

Instructions *: 1)* ***All*** *questions are* ***compulsory****.*
2) ***All*** *questions carry* ***equal*** *marks.*

1. Choose correct alternatives : **14**

1) A co-processor _____
   A) is relatively easy to support in software
   B) causes all processor to function equally
   C) works with any application
   D) is quite common in modern computer

2) A Microsoft Windows is _____
   A) Graphic Program B) Word Processing System
   C) Operating System D) Database Program

3) The strategy of allowing processes that are logically runnable to be temporarily suspended is called _____
   A) preemptive scheduling B) non preemptive scheduling
   C) shortest job first D) first come first served

4) Which is not application software ?
   A) Page Maker B) WinWord XP
   C) MacOS D) Windows NT

5) Which of the following operating system does not implement the multitasking truly ?
   A) Windows 98 B) Windows NT
   C) Windows XP D) MS DOS

6) The part of machine level instruction, which tells the central processor what has to be done, is _____
   A) Operation code B) Address C) Locator D) Flip-Flop

P.T.O.

7) Interprocess communication _____
   A) is required for all processes
   B) is usually done via disk drives
   C) is never necessary
   D) allows processes to synchronize activity

8) Which of the following software types is used to simplify using systems software ?
   A) spreadsheet B) timesharing C) multitasking D) none of the above

9) Scheduling is _____
   A) allowing jobs to use the processor
   B) unrelated to performance consideration
   C) not required in uniprocessor systems
   D) the same regard-less of the purpose of the system

10) What is the name given to all the programs inside the computer with makes it usable ?
   A) Application software B) System software
   C) Firm ware D) Shareware

11) Semaphores _____
   A) synchronize critical resources to prevent deadlock
   B) synchronize critical resources to prevent contention
   C) are used to do I/O
   D) are used for memory management

12) Round Robin scheduling is essentially preemptive version of _____
   A) FIFO B) SJF C) LIFO D) None of the above

13) Multiprogramming _____
   A) is a method of memory allocation by which the program is subdivided into equal portions or pages and core is subdivided into equal portions or blocks
   B) consists of those addresses that may be generated by a processor during execution of a computation
   C) is a method of allocating processor time
   D) allows multiple programs to reside in separate areas of core at the time

14) Which is not the state of the process ?
   A) Blocked B) Running C) Ready D) Privileged

2. Solve **any seven** : **14**
   1) What is meant by operating system ?
   2) Define a process.
   3) What is the difference between single thread and multi thread process ?
   4) What do you mean by virtual machine ?
   5) What is meant by scheduling ?
   6) What is meant by System Call ?
   7) What is Fork ?
   8) Define multiprogramming operating system.

3. A) Solve **any two** : **8**
      1) Explain Real Time Operating System and its type in detail.
      2) Explain in detail batch operating system and parallel operating system.
      3) Explain in detail Time Sharing Operating System and Distributed Operating System.

   B) Explain in detail different services provided by Operating System. **6**

4. Solve **any two** : **14**
   1) Explain multilevel queue scheduling with example.
   2) Explain First Come First Serve (FCFS) algorithm with example.
   3) Explain classic problem of Synchronization in detail.

5. Solve **any two** : **14**
   1) Explain any four system call types in detail.
   2) Explain Round Robin algorithm with example.
   3) Explain critical section problem and its solutions in detail.

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SLR-Z – 12

Seat No.	

B.Sc. (ECS) – II (Semester – III) (New (CGPA)) Examination, 2016
OBJECT ORIENTED PROGRAMMING USING C++ – I
(Paper – II)

Day and Date : Thursday, 7-4-2016 Max. Marks : 70
Time : 2.30 p.m. to 5.00 p.m.

1. Choose and write a correct answer from given four alternatives : **14**

1) Static variable declared in a class are also called _____

a) Instance variable b) Named constant
c) Global variable d) Class variable

2) The default class access scope is _____

a) Private b) Protected
c) Public d) None of these

3) A function defined inside a class is called _____

a) A class function b) A friend function
c) A member function d) None of the above

4) The operator ? : is _____

a) Logical operator b) Relational operator
c) Conditional operator d) Arithmetic operator

5) A constructor that does not have any parameter is called _____ constructor.

a) Custom b) Dynamic
c) Static d) Default

P.T.O.

6) Where does keyword friend should be placed ?
   a) Function declaration
   b) Function definition
   c) Main function
   d) None of these

7) What is object in C++ ?
   a) Object is an instance of a class
   b) Object is function of class
   c) Object is part of class
   d) Object is data type of class

8) Data members and member function are enclosed within _____
   a) Union
   b) Structure
   c) Class
   d) All of above

9) Which of the following approach is adopted by C++ ?
   a) Top down
   b) Bottom up
   c) Right left
   d) Left right

10) Which of the following operators could be overloaded ?
   a) Size of
   b) +
   c) ? =
   d) : :

11) Destructor is prefix with a _____ character.
   a) Colon
   b) Semicolon
   c) Tilde
   d) None of these

12) Which of the following keywords are used to control access to a class member ?
   a) default
   b) break
   c) protected
   d) goto

13) The developer of C++ language is _____
   a) Dennis Ritchie
   b) Ken Thompson
   c) Bjarne Stroustrup
   d) Richards

14) We can do constructor overloading in C++ ?
   a) True
   b) False

2. Solve **any seven** of the following : **14**

   1) What is class ?

   2) What are tokens in CPP ?

   3) Define friend function.

   4) What is meant by function ?

   5) List out relational operator in CPP.

   6) What is type casting in CPP ?

   7) What is meant by derived datatype ?

   8) What are different features of CPP ?

   9) State any four binary operators.

3. A) Attempt **any two** of the following : **10**

      1) What do you mean by C++ access specifiers ?

      2) Explain nested class with example.

      3) What are datatypes in CPP ?

   B) Define copy constructor with example. **4**

4. Attempt **any two** of the following : **14**

   1) Write a program to overload any binary arithmetic operator.

   2) Write a program to demonstrate friend function.

   3) Explain various types of constructor used in CPP.

5. Attempt **any two** : **14**

   1) Write a program to demonstrate destructor in CPP.

   2) Explain Array of object.

   3) Write a program that show static data member and static member functions.

SLR-Z – 13

Seat No.	

B.Sc. (ECS) (Part – II) (Semester – III) Examination, 2016
COMPUTER SCIENCE
Paper – III : Data Structures and Algorithms
(New CGPA Pattern)

Day and Date : Saturday, 9-4-2016 Total Marks : 70

Time : 2.30 p.m. to 5.00 p.m.

Instructions *: 1)* ***All*** *questions are* ***compulsory****.*

2) Figures to the ***right*** *indicate* ***full*** *marks.*

1. A) Choose the correct alternatives : **10**

1) A mathematical model with a collection of operations defined on that model is called

a) Data structure b) Primitive data type

c) Abstract data type d) Algorithm

2) A data structure where the element are added and deleted from different end is called

a) stack b) queue

c) linked-list d) tree

3) The data structure required to evaluate a postfix expression is

a) stack b) queue

c) tree d) none of these

4) Stack is a _____ Data structure.

a) FILO b) LIFO

c) FIFO d) Non-linear

5) In a linked list each node may contain atleast _____ field.

a) 1 b) 2

c) 3 d) None of these

P.T.O.

6) When a new data are to be inserted into a data structure, but there is no available space; this situation is called
   a) houseful b) saturated
   c) underflow d) overflow

7) A doubly circular linked list contains _____ NULL links.
   a) one b) two
   c) three d) zero

8) The largest index of an array is called as
   a) lower bound b) upper bound
   c) min bound d) max bound

9) Which of the following is an example of divide and conquer technique ?
   a) quick sort b) array
   c) linked list d) none of these

10) Which of the following condition satisfies the stack empty ?
   a) top = size – 1 b) top = NULL
   c) top = – 1 d) top = 0

B) State **True**/**False** : **4**

1) The parameters passed during the function call are called as formal parameters.

2) We can implement queue by using linked list.

3) The memory of array depends on type and number of elements.

4) In singly linked list we can traverse in both directions.

2. Solve **any seven** from the following : **14**

1) What is stack ? Give its examples.

2) Define space complexity and time complexity.

3) What are the disadvantages of a pointer ?

4) What is Backtracking ? Give its example.

5) What is ADT ? Give its examples.

6) What are the advantages of singly linked list over doubly linked list ?

7) What is the need of data structure ?

8) What is algorithm ? What are the characteristics of an algorithm ?

9) What is dequeue ? What the types are of dequeue ?

3. A) Attempt **any two** : **10**

   1) Write an algorithm for conversion of infix expression into postfix expression using stack.

   2) Explain the various operations on linear queue.

   3) Write a function to count total number of nodesin a singly linked list.

   B) Explain the use of stack for recursion. **4**

4. Attempt **any two** : **14**

   1) Write a menu driven program to implement stack using array.

   2) What is pointer ? Explain pointer to function with example.

   3) Write a program to access ten numbers in array and display only odd numbers.

5. Attempt **any two** : **14**

   1) What is priority queue ? Explain linked representation of priority queue.

   2) Write a program to insert an element in an array at given position.

   3) Write a menu driven program to implement circular linked list with the operations create, insert in between, display.

SLR-Z – 14

Seat No.	

B.Sc. (ECS) – II (Semester – III) (New-CGPA) Examination, 2016
Paper – IV : SOFTWARE ENGINEERING – I

Day and Date : Monday, 11-4-2016 Total Marks : 70

Time : 2.30 p.m. to 5.00 p.m.

Instructions *: 1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *indicate* ***full*** *marks.*

1. Choose the correct alternatives : **14**

1) _____ is not the role of system analyst.
   a) Programmer b) An intelligent salesperson
   c) An agent of change d) An architect

2) Which of the following is considered the step in systems development life cycle ?
   a) Systems analysis b) Systems design
   c) Testing d) All of these

3) Software engineering is the systematic approach to the
   a) Development of software b) Maintenance of software
   c) Operation of software d) All of these

4) Programmers use flowcharts to organize and summarize the results of their problem analysis.
   a) True b) False

5) Decision tables consists of _____ quadrants.
   a) two b) three c) four d) five

6) The _____ model is useful to guide the risks in the project.
   a) Prototype b) Spiral c) SDLC d) Waterfall

7) Which of the following is the characteristic of a system ?
   a) Organization b) Interaction
   c) Interdependence d) All of these

P.T.O.

8) Feasibility study is carried out by managers of the organization
   a) True b) False
9) Detailed study of existing system is referred as
   a) Feedback b) Feasibility study
   c) System analysis d) Programming
10) _____ is a tabular method for describing the logic of the decisions to be taken.
   a) Decision tables b) Decision tree
   c) Decision method d) Decision data
11) If the system is in routine in nature then it gives the positive feedback
   a) True b) False
12) E-mail is an example of _____ system.
   a) TPS b) EIS c) EX d) MIS
13) RAD is a process that enables a developer to create a working model of a system.
   a) True b) False
14) In decision trees branches represent
   a) name of process b) conditions
   c) actions to be performed d) rules

2. Solve **any seven** of the following : **14**

1) Distinguish between positive and negative feedback.
2) Who is a system analyst ?
3) What is the main goal of software engineering ?
4) Explain the concept of interviews.
5) Distinguish between open and closed system.
6) What is requirement anticipation ?
7) What is a flowchart ?
8) Give the limitations of decision tables.
9) List the outputs of College Admission System.

3. A) Attempt **any two** of the following : **10**
   1) What is system ? Give one example.
   2) Give the advantages and disadvantages of HIPO.
   3) State the principles of flowcharting.

   B) Write note on need of feasibility study. **4**

4. Attempt **any two** of the following : **14**
   1) State the strengths and weaknesses of waterfall model.
   2) Explain the need of decision table and decision tree.
   3) Write note on (i) Interface (ii) Interdependence (iii) Boundaries.

5. Attempt **any two** of the following : **14**
   1) Explain correctness and reliability of software.
   2) Describe the process of prototyping.
   3) Explain the elements of the system.

SLR-Z – 15

Seat No.	

B.Sc. (ECS) – II (Semester – III) (New CGPA) Examination, 2016
ELECTRONICS (Paper – V)
Organization of PC

Day and Date : Tuesday, 12-4-2016 Total Marks : 70
Time : 2.30 p.m. to 5.00 p.m.

***Instructions** : 1) **All** questions are **compulsory**.*
*2) Figures to the **right place** indicate **full** marks.*

1. Multiple choice questions : **14**

1) The _____ printer does not print whole character.
   a) Laser b) Inkjet
   c) Dot matrix d) Daisy wheel

2) The inner side of CRT monitor is coated with _____
   a) Sodium b) Aluminum
   c) Phosphor d) Nitrate

3) In _____ mode CPU does not perform data transfer.
   a) Programmed b) Interrupt
   c) DMA d) None of these

4) The _____ printer operates much like Xerox machine.
   a) Inkjet b) Daisy wheel
   c) Laser d) Line

5) _____ memory is a buffer memory between the main memory and CPU.
   a) Virtual memory
   b) Cache memory
   c) Flash memory
   d) RAM

6) The _____ supports multiprogramming and virtual memory.
   a) PC-AT b) PC
   c) PC-XT d) PC-NT

7) _____ is a impact printer.
   a) Laser b) Daisy wheel
   c) Inkjet d) Thermal

8) Keyboard use _____ mode for data transfer.
   a) Programmed b) Interrupt
   c) DMA d) I/O mode

9) The fetching of instruction is done by _____
   a) ALU b) Control
   c) Memory d) Input device

10) In microprocessor the data bus is always _____
   a) Unidirectional
   b) Bidirectional
   c) Multidirectional
   d) None of these

11) Usually the boot strap program is stored in _____
   a) RAM b) ROM
   c) Cache d) None of these

12) _____ operating system has specific periodic task.
   a) Stand along OS
   b) Multitasking OS
   c) Real time OS
   d) Time sharing OS

13) _____ format is also called double density format.
   a) FM b) MFM
   c) FFM d) FMF

14) In CD – ROM _____ signal is used for reading and writing data.
   a) Laser
   b) Electrical
   c) Electromechanical
   d) None of these

2. Answer **any seven** of the following : **14**
   1) Enlist the names of interrupt.
   2) Which electronic devices are used in construction of cache memory ?
   3) Give examples of single user, multitasking operating system.
   4) Which system files are used to start windows operating system ?
   5) Write characteristics of printer.
   6) Draw diagram of matrix keyboard organization.
   7) Draw block diagram of CRT monitor.
   8) What is instruction cycle ?
   9) What is pit and land ?

3. A) Answer **any two** of the following : **10**
      1) Explain block diagram and ALU.
      2) Explain CD-ROM drive operation.
      3) Compare features of PC and PC/AT.

   B) Write short note on MODEM. **4**

4. Attempt **any two** of the following : **14**
   1) Explain working principle of laser printer with suitable diagram.
   2) Explain direct memory access data transfer.
   3) Write short note latest motherboard.

5. Attempt **any two** of the following : **14**
   1) Explain types of operating system.
   2) Explain working principle of scanner with suitable diagram.
   3) Explain error detection techniques in PC.

SLR-Z – 16

Seat No.	

B.Sc. (ECS) – II (Semester – III) (New CGPA) Examination, 2016
ELECTRONICS (Paper – VI)
Microprocessor – I

Day and Date : Wednesday, 13-4-2016 Total Marks : 70
Time : 2.30 p.m. to 5.00 p.m.

Instructions : *1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *place indicate* ***full*** *marks.*

1. Multiple Choice Questions : **14**

1) TEST is _____ instruction.
   a) Arithmetic b) Logical
   c) Program control d) Data transfer

2) For 32KB memory capacity _____ address lines are used.
   a) 15 b) 14 c) 13 d) 12

3) The address generated by segmented program is called as _____ address.
   a) logical b) real c) physical d) pointer

4) In _____ method acknowledgement signal is used.
   a) parallel b) synchronous
   c) handshaking d) strobe

5) In direct mapping tag field consist of _____ bits.
   a) 9 b) 8 c) 7 d) 6

6) PUSH is _____ address instruction.
   a) zero b) one c) two d) three

7) The transformation of data from main memory to cache is called as
   a) swapping b) mapping c) accessing d) polling

P.T.O.

8) The internal memory is acts as
   a) ROM b) RAM
   c) CPU register d) Both a) and b)

9) In _____ level memory hierarchy splitted cache is used.
   a) 2 b) 3 c) 4 d) 1

10) _____ is software interrupt.
   a) Daisy chain b) Polling
   c) Parallel priority d) Serial priority

11) If the data is found in cache is called as
   a) swapping b) hit c) mapping d) miss

12) In _____ communication start and stop bits are used.
   a) asynchronous b) synchronous
   c) parallel d) none of these

13) CMA is _____ addressing mode.
   a) immediate b) register
   c) direct d) implied

14) The Intel 8089 I/O processor _____ pin integrated circuit package.
   a) 20 b) 30 c) 40 d) 50

2. Answer **any seven** of the following : **14**

1) Draw the diagram of Daisy chain priority interrupt.
2) Explain the register and direct addressing mode.
3) How many address lines required to address 16MB and 16GB memory ?
4) Why the stack is called zero address machines ?
5) Explain shift and rotate instructions.
6) Draw the diagram of connection of I/O bus and I/O devices.
7) Explain the program control instructions.
8) State characteristics of memory.
9) What is meant by asynchronous data transfer ?

3. A) Answer **any two** of the following : **10**
   1) Explain bit slice processor.
   2) Explain diagram of I/O mapped and memory mapped I/O.
   3) Explain the optical memory with neat diagram.

   B) Answer the following : **4**

   Solve the A* B + C * C by using one, two and three address instructions.

4. Answer **any two** of the following : **14**
   1) What is mapping technique widely used in cache memory ? Explain in detail.
   2) Explain the polling and parallel priority interrupts in detail.
   3) Explain the block diagram of memory connection to the CPU.

5. Answer **any two** of the following : **14**
   1) Explain the concept of paging in virtual memory.
   2) What is DMA ? Explain the DMA transfer in detail.
   3) What are the types of instructions ? Explain the data manipulation instruction.

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SLR-Z – 17

Seat No.	

B.Sc. (ECS – II) Sem. III (Old) Examination, 2016
OPERATING SYSTEM – I (Paper – I)

Day and Date : Wednesday, 6-4-2016 Max. Marks : 50

Time : 2.30 p.m. to 4.30 p.m.

Instructions *: 1) Figures to the* ***right*** *indicate* ***full*** *marks.*
2) ***All*** *questions are* ***compulsory****.*

1. Multiple choice questions. **10**

1) The solution to the critical section problem must satisfy
   a) Mutual exclusion b) Bounded waiting
   c) Progress d) All the three

2) In _____ scheduling algorithm there is possibility of saturation of jobs.
   a) SJF b) FCFS
   c) Multilevel feedback queue d) Multilevel queues

3) A process is allowed to terminate another process only if
   a) The first process is parent of the second process
   b) The first process is a system process
   c) Both processes are children of same parent
   d) The first process is child of second process

4) The CPU can only execute program which are stored in
   a) The hard disk b) The floppy disk
   c) The main memory d) None of these

5) In real time system _____ is important.
   a) Completing processing on time
   b) Showing good user interface
   c) Optimum utilization of I/O devices
   d) None of these

P.T.O.

6) A situation, where several processes access and manipulate the same data concurrently and the outcome depends on particular order is called
   a) Process state b) Busy waiting
   c) Race condition d) None of these

7) To implement _____ scheduling, we keep the ready queue as a FIFO queue of processes. New processes are added to the tail of ready queue.
   a) Multilevel queue scheduling b) RR scheduling
   c) Priority scheduling d) None of these

8) When processes enters the system, they are put into a _____ queue, which consist of all processes in the system.
   a) Job queue b) Ready queue
   c) Waiting queue d) Device queue

9) _____ provides an interface to the services made available by an operating system.
   a) System services b) Co-operating process
   c) System calls d) None of these

10) The first OS developed was in the form of
   a) Batch system b) Simple monitor
   c) Multiprogramming system d) Time sharing system

2. Answer **any five** of the following. **10**

1) Write a short note on multiprogramming.

2) Write a short note on SJF.

3) What is interprocess communication ?

4) What is command interpreter ?

5) Explain scheduling queues.

6) What is real time operating system ?

3. A) Answer **any two** of the following : **6**

1) What are the requirements that must be satisfied by the solution of the critical section problem ?

2) Explain FCFS scheduling with example.

3) Explain layered structure of operating system.

B) Consider the following jobs. Take the time quantum 4 and calculate the following using RR scheduling. **4**

Jobs	Burst Time
A	16
B	13
C	8
D	7

i) Prepare a Gantt chart for it.

ii) Calculate average turn around time and average waiting time.

4. Answer **any two** of the following : **10**

1) Explain multilevel queue and multilevel feedback queue in detail.

2) Explain components of operating system.

3) What are the services provided by operating system ?

5. Answer **any two** of the following : **10**

1) Write a note on process states with neat diagram.

2) Explain dining-philosophers problem.

3) Explain different types of operating system.

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SLR-Z – 18

Seat No.	

B.Sc. (ECS) – II (Semester – III) (Old) Examination, 2016
(Paper – II) OBJECT ORIENTED PROGRAMMING USING 'C++' – I

Day and Date : Thursday, 7-4-2016 Max. Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

Instructions** : 1) **All** questions are **compulsory.
*2) Figures to the **right** place indicate **full** marks.*

1. Choose correct alternative: **10**

1) Data members of a class cannot initialize inside the class definition.
   a) True b) False

2) Friend function can access _____ data of class.
   a) Public b) Private c) Protected d) All of these

3) C++ follows _____approach.
   a) Top-down b) Bottom-up c) Top-up d) Bottom-down

4) Wrapping up data and functions into single unit is called _____
   a) Encapsulation b) Data hiding
   c) Inheritance d) Polymorphism

5) Static variable should be defined _____
   a) Outside the class b) Inside class
   c) Both a) and b) d) None of these

6) Operator overloading is compile time polymorphism.
   a) True b) False

7) 'cin' in C++ is _____
   a) Object b) Function c) Operator d) None of these

8) Single class contains multiple destructors.
   a) True b) False

P.T.O.

9) If we define function inside class body then compiler treats it is as _____function.

a) Friend b) Destructor c) Constructor d) Inline

10) Return type of constructor is_____

a) int b) float c) void d) Nothing

2. Answer **any five** from following : **10**

1) Who develop C++ language ? Where and When ?
2) List out characteristics of procedure oriented programming.
3) Explain data abstraction.
4) List out characteristics of destructor.
5) Write use of 'new' and 'delete' operator.
6) What is difference to define member function inside class and outside class ?

3. A) Answer **any two** from following : **6**

1) What is access specifier ? List out different access specifier with their significance.
2) What is data type ? Explain all primitive data types in C++.
3) Write the difference between 'Structure' and 'Class'.

B) Write a program that shows use of static data member and static member function. **4**

4. Answer **any two** of following : **10**

1) Explain different parameter passing techniques in C++.
2) Write a program to overload '+' as binary operator to find maximum number in an array.
3) What is friend function ? Explain it with one example.

5. Answer **any two** of following : **10**

1) Write a program to check entered number is prime or not using copy constructor.
2) What is operator overloading ? Write rules for operator overloading.
3) Write a program which accept 10 numbers and print only even numbers in it (Use 'new' operator).

SLR-Z – 19

Seat No.	

B.Sc. (ECS) – II (Semester – III) (Old) Examination, 2016
Paper – III : DATA STRUCTURES AND ALGORITHMS – I

Day and Date : Saturday, 9-4-2016 Max. Marks : 50

Time : 2.30 p.m. to 4.30 p.m.

N.B. *: 1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *place indicate* ***full*** *marks.*

1. Choose correct alternatives : **10**

1) _____ is LIFO data structure.
   a) Stack b) Queue c) Tree d) None of these

2) _____ data structure is used in simulation application.
   a) Stack b) Queue c) Linked List d) Tree

3) Linked list is flexible than stack and queue.
   a) True b) False

4) ADT stands for _____
   a) Abstract Data Structure b) Abstract Data Type
   c) Abstract Data System d) None of these

5) Attempting to pop element from full stack gives _____
   a) Stack overflow b) Stack underflow
   c) Topmost element d) None

6) In ascending priority queue, largest element among all elements will process firstly.
   a) True b) False

7) Array is hierarchical data structure.
   a) True b) False

8) In sub routine call, _____ data structure is useful.
   a) Stack b) Queue c) Array d) Linked list

P.T.O.

9) Circular linked list may have NULL pointer.
   a) True b) False

10) In sequence of operations of stack push(1), push(2), pop, push(1), push(2), pop, pop, push(2), pop, pop. The sequence of popped out values are _____
   a) 2, 2, 2, 1, 1 b) 2, 2, 1, 1, 2 c) 2, 1, 2, 2, 1 d) 2, 2, 1, 2, 1

2. Answer **any five** of the followings : **10**

1) What is Linear and Non Linear data structure ?
2) Write use of 'front' and 'rear' end of queue.
3) How linked list is better than stack and queue ?
4) Define : Time and Space complexity.
5) List out applications of stack.
6) Write precondition for PUSH ( ) and POP ( ) operations of stack.

3. A) Attempt **any two** of the followings : **6**

1) Explain priority queue in detail.
2) Write algorithm to search node in linear linked list.
3) Write a program that finds smallest element in one dimensional array.

B) Explain "Divide and conquer" algorithm with example. **4**

4. Answer **any two** of the followings : **10**

1) What is "Doubly linear linked list" ? Implement the function that counts total nodes in doubly linear linked list.
2) Write a program which converts infix expression into postfix form.
3) What is ADT ? Explain ADT for 'Queue' data structure.

5. Answer **any two** of the followings : **10**

1) What is Circular Queue ? Implement its insert ( ) and remove ( ) operations.
2) How stack is useful to calculate value of postfix expression ?
3) Explain following operations of singly circular linked list :
   I) Insert_End( )
   II) Remove_Between( ).

_____

SLR-Z – 20

Seat No.	

B.Sc. (ECS) – II (Semester – III) (Old) Examination, 2016
SOFTWARE ENGINEERING – I
(Paper – IV)

Day and Date : Monday, 11-4-2016 Max. Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

Instructions *: 1) Figures to the* ***right*** *indicate* ***full*** *marks.*
2) ***All*** *questions are* ***compulsory****.*

1. Choose the correct alternative : **10**

1) The process of minimizing the difference between checked and expected output is called
   a) feedback b) control c) monitor d) all

2) The major groups of users for _____ kind of systems is lower level management.
   a) MIS b) TPS c) DSS d) EIS

3) Engineers and administrators witness the emergence of a broadening approach to the problem is called system
   a) design b) analysis c) approach d) all

4) _____ should give notice ideas in learning system, screen, reports etc.
   a) user b) programmer c) analyst d) none

5) Users, programmers and s/w maintenance of s/w product requires _____ approach.
   a) systematic b) regular c) pilot d) none

6) Performance of s/w system depends upon the
   a) execution speed b) memory
   c) program logic d) all

7) _____ refers the ability of system to coexists and co operate with other system.
   a) portability b) reliability
   c) interoperability d) all

P.T.O.

8) Training to the user is _____ feasibility.
   a) technical b) economical c) operational d) all

9) Minor changes in the processing logic is called _____ a system.
   a) testing b) correcting c) maintaining d) searching

10) Prototypes can be used for
   a) demonstration b) training c) testing d) all

2. Answer **any five** of the following : **10**
   1) What is the objective of feasibility study ?
   2) What is software engineering ?
   3) Role of feedback in the system.
   4) Tools for prototyping.
   5) What is record review ?
   6) Characteristics of N-S diagram.
   7) Explain flowcharting.

3. A) Answer **any two** of the following : **6**
      1) Write a note on skills required in system analyst.
      2) Differentiate between structured and unstructured interview techniques.
      3) Explain user transaction requirements.

   B) Describe various elements of system. **4**

4. Answer **any two** of the following : **10**
   1) Explain preliminary investigation stage in SDLC.
   2) Explain the role of system analyst in s/w development.
   3) Explain three activities involved in requirement analysis.

5. Answer **any two** of the following : **10**
   1) Explain qualities of software.
   2) Explain various steps in prototyping.
   3) Explain various tools used in decision making.

_____

SLR-Z – 21

Seat No.	

B.Sc. (ECS) – II (Semester – III) (Old) Examination, 2016
ELECTRONICS (Paper – V)
Organization of PC – I

Day and Date : Tuesday, 12-4-2016 Total Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

***Instructions** : 1) **All** questions are **compulsory**.*
*2) Figures to the **right** place indicate **full** marks.*

1. Multiple choice questions. **10**

1) Laser printer is _____ printer.

a) flash impact b) impact c) non-impact d) a and b both

2) In microprocessor the address bus is always on _____ bus.

a) bidirectional b) unidirectional
c) multidirectional d) both a and c

3) _____ memory is a buffer memory between the main memory and CPU.

a) Virtual memory b) Cache memory
c) Flash memory d) RAM

4) _____ is called as Interrupt Controller.

a) 8255 b) 8279 c) 8259 d) 8155

5) _____ is a multitasking, single user operating system.

a) Unix b) Linux c) Macros d) Windows

6) _____ printer does not print whole character.

a) laser b) inkjet c) dot matrix d) none of these

7) In _____ mode CPU does not perform data transfer.

a) programmed b) interrupt c) DMA d) Real

P.T.O.

8) The _____ memory is the working memory of the computer.
   a) HDD b) RAM c) DVD d) USB

9) The fetching of instruction is done by _____
   a) ALU b) Control c) Memory d) Input device

10) The common method of scanning is called _____
   a) Vertical b) Horizontal c) Raster scan d) Vector scan

2. Answer **any five** of the following. **10**

1) Draw block diagram of control unit.

2) Write names of memory types.

3) What is instruction cycle ?

4) Write four characteristics of printer.

5) What is command line interface and Graphical User Interface ?

6) What is pit and land ?

3. A) Answer **any two** of the following. **6**

1) Compare features of PC and PC-AT.

2) Write note on mouse.

3) Explain FM recording format used in magnetic disk.

B) Explain different control signal used in PC. **4**

4. Attempt **any two** of the following. **10**

1) Briefly explain error detection techniques.

2) Explain Inkjet printer.

3) Explain interrupt mode of data transfer.

5. Attempt **any two** of the following. **10**

1) Explain CRT monitor.

2) Explain concept of virtual memory.

3) Explain OG and NG PC family in detail.

_____

SLR-Z – 22

Seat No.	

B.Sc. (ECS) – II (Semester – III) (Old) Examination, 2016
Paper – VI : MICROPROCESSOR – I

Day and Date : Wednesday, 13-4-2016 Max. Marks : 50

Time : 2.30 p.m. to 4.30 p.m.

Instructions *: 1)* ***All*** *questions are* ***compulsory****.*
2) Figures to ***right*** *indicate* ***full*** *marks.*
3) Draw circuit diagram ***wherever*** *necessary.*

1. Fill in the blanks with correct alternatives and rewrite : **10**

1) The IC 8089 is _____
   a) DMA b) Controller c) IOP d) Coprocessor
2) IAC is part of _____
   a) ALU b) CU c) MMU d) DPU
3) POP is _____ instruction.
   a) Data transfer b) Processor
   c) Logical d) Arithmetic
4) Static memory uses _____ to store information.
   a) Capacitor b) Particle
   c) Pits and land d) Flip flop
5) MOV A, B is _____ address instruction.
   a) 3 b) 2 c) 1 d) 0
6) _____ register points to TOS.
   a) BX b) PC
   c) SP d) SI
7) Memory mapped I/O uses _____ control lines.
   a) Common b) Separate
   c) Same d) None of these

P.T.O.

8) To access 256 byte memory _____ address lines used.
   a) 8 b) 7
   c) 16 d) 20
9) CAM is _____ memory.
   a) Associative b) Cache
   c) Virtual d) Real
10) PC stores address of _____ instruction.
   a) Current b) Next
   c) Last d) TOS

2. Answer **any five** of the following : **10**
   a) Explain serial communication.
   b) Explain function of CS signal.
   c) Explain direct addressing mode.
   d) Draw diagram of daisy chaining.
   e) Explain data transfer instruction.
   f) Explain power consumption of memory.

3. A) Answer **any two** of the following : **6**
      1) Explain memory management concept.
      2) Explain memory stack.
      3) Explain combinational ALU.
   B) Explain I/O mapped I/O. **4**

4. Attempt **any two** of the following : **10**
   1) Explain modes of data transfer.
   2) Explain optical memory.
   3) Explain Bit Slice Processor.

5. Attempt **any two** of the following : **10**
   1) Explain parallel priority interrupt.
   2) Compare memory connection to CPU.
   3) Explain data manipulation instruction.

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SLR-Z – 24

Seat No.	

B.Sc. (ECS II) (Semester – IV) (Old) Examination, 2016
OPERATING SYSTEM – II (Paper – I)

Day and Date : Monday, 18-4-2016 Max. Marks : 50
Time : 10.30 a.m. to 12.30 p.m.

Instructions *: 1) Figures to the* ***right*** *indicate* ***full*** *marks.*
2) ***All*** *questions are* ***compulsory****.*

1. Multiple choice questions : **10**

1) In contiguous memory allocation, the memory is usually divided into two partitions, one for the resident operating system and one for _____
   a) System processes
   b) User processes
   c) Ready processes
   d) None of these

2) The relocatable code is generated at _____
   a) Compile time b) Run time
   c) Execution time d) Load time

3) The first-fit and best-fit strategies for memory allocation suffer from _____
   a) External fragmentation
   b) Internal fragmentation
   c) Segmentation
   d) None of these

4) To enable a process to be larger than the amount of memory allocated to it, we can use _____
   a) Overlays b) Fragmentation
   c) Paging d) Segmentation

5) Physical memory is broken into fixed size blocks called _____
   a) Document b) Pages
   c) Frames d) Packets

6) Bankers algorithm is a _____
   a) Deadlock avoidance algorithm
   b) Deadlock prevention algorithm
   c) Deadlock detection algorithm
   d) None of the above
7) A page table is used for _____
   a) Converting logical address to physical address
   b) Converting physical address to logical address
   c) Searching a file
   d) Looking at contents of a file
8) _____ is simplest directory structure in which all the files are contained in the same directory.
   a) Two level directory
   b) Single level directory
   c) Tree structure directory
   d) None of these
9) _____ allocation method does not support direct access.
   a) Index
   b) Contiguous
   c) Linked
   d) All the above
10) The UNIX OS is _____
   a) Time sharing
   b) Multiuser OS
   c) Multitasking
   d) All the above

2. Answer **any five** of the following : **10**
   1) What are the attributes of file ?
   2) What is resource allocation graph ?
   3) Explain two level directory.
   4) Distinguish between compile time and execution time.
   5) What is paging ?
   6) What is UNIX operating system ?

3. A) Answer **any two** of the following : **6**

   1) Explain FIFO page replacement algorithm with suitable example.

   2) Explain context of a process.

   3) Explain structure of the buffer pool.

   B) Write a note on contiguous memory allocation. **4**

4. Answer **any two** of the following : **10**

   1) Write a note on recovery from deadlock.

   2) Explain the operations on file.

   3) What are the advantages and disadvantages of the buffer cache ?

5. Explain **any two** of the following : **10**

   1) Write a note on deadlock prevention.

   2) Explain different file allocation methods.

   3) Explain swapping in detail.

SLR-Z – 25

Seat No.	

B.Sc. (ECS) – II (Semester – IV) (Old) Examination, 2016
OBJECT ORIENTED PROGRAMMING USING C++ – II (Paper – II)

Day and Date : Wednesday, 20-4-2016 Max. Marks : 50
Time : 10.30 a.m. to 12.30 p.m.

Instructions : *1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *place indicate* ***full*** *marks.*

1. Choose correct alternative : **10**

1) All manipulator belongs to _____ header file.
   a) manip.h b) iomanip.h
   c) format.h d) both b and c

2) Versioning of software is possible using _____ concept.
   a) Data Encapsulation b) Inheritance
   c) Polymorphism d) None of these

3) File allows temporary storage of data
   a) True b) False

4) Abstract class contains at least one _____ function.
   a) Friend b) Virtual
   c) Pure virtual d) None of these

5) _____ mode is used to seek file pointer at the beginning of file at opening.
   a) ios::in b) ios::app c) ios::ate d) both b and c

6) Constructor can be virtual whereas destructor is not.
   a) True b) False

7) 'cout' is predefined object of _____ class.
   a) istream b) ostream c) both a and b d) none of these

8) _____ function does not have any definition.
   a) inline b) friend c) virtual d) pure virtual

P.T.O.

9) In _____ type of inheritance, multiple classes are derived from single class.

a) single b) multiple c) hierarchical d) multi-path

10) In protected derivation of class, public data of base class becomes _____ for derived class.

a) public b) private c) protected d) not inherited

2. Answer **any five** from following : **10**

1) What is custom manipulator ?
2) Define : Virtual Function.
3) What is file ? Write use of seek( ) function.
4) What is virtual destructor ?
5) Write use of 'this' keyword.
6) What are input and output streams ?

3. A) Answer **any two** from following : **6**

1) Explain private and protected derivation of new class.
2) Explain functions of ostream class.
3) Explain formatting flags in manipulators.

B) Write a program to implement multiple inheritance. **4**

4. Answer **any two** of following : **10**

1) Write a program that copies content of one file into another file.
2) Explain Exception handling in C++.
3) What is pure virtual function ? How it is implemented in C++ ?

5. Answer **any two** of following : **10**

1) Write a program that demonstrates the use of virtual function.
2) Write a program to implement virtual base class.
3) What is Inheritance ? Explain its different types.

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SLR- Z– 26

Seat No.	

B.Sc. (ECS) – II (Sem. – IV) (Old) Examination, 2016
Paper – III : DATA STRUCTURES AND ALGORITHMS – II

Day and Date : Thursday, 21-4-2016 Total Marks : 50

Time : 10.30 a.m. to 12.30 p.m.

Instructions *: 1)* ***All*** *questions are* ***compulsory****.*

2) Figures to the ***right*** *indicate* ***full*** *marks.*

1. Choose the correct alternatives. **10**

1) Which of the following operation can be performed on B-tree ?
   a) Searching b) Insertion
   c) Display all key values d) All of these

2) In which of the following data structure data is organised in a hierarchical manner ?
   a) Linear b) Non-linear
   c) Relational d) Network

3) Which of the following sorting algorithm is of divide and conquer type ?
   a) Bubble Sort b) Insertion Sort
   c) Quick Sort d) All of these

4) The number of sub trees of a node is called its degree.
   a) True b) False

5) In representing graphs, two most common representation are
   a) adjacency list and tables b) adjacent matrix and tables
   c) adjacency matrix and adjacency list d) none of these

6) A tree contains
   a) no loops b) no cycles
   c) both a) and b) d) none of these

7) A digraph is called strongly connected if there is
   a) any other vertex b) one vertex
   c) both a) and b) d) none of these

P.T.O.

8) Every binary tree is a tree, not every tree is a binary tree.
   a) True b) False

9) _____ algorithm is frequently used when the total number of elements is small.
   a) Heap sort b) Insertion sort
   c) Bubble sort d) Quick sort

10) The function used to modify the way of sorting the keys of records is called
   a) hash function b) indexing function
   c) both a) and b) d) none of these

2. Answer **any five** of the following. **10**
   1) Why binary search is better than linear search ?
   2) What is complete binary tree ? Give one example.
   3) Give the example of inorder tree traversal.
   4) Define connected graph with example.
   5) What is searching ? What are the methods of searching ?
   6) Give the advantages of non-linear data structures.

3. A) Answer **any two** of the following. **6**
      1) Explain different tree traversal methods.
      2) Differentiate between B –tree and B +tree.
      3) Give the drawbacks of linear search.
   B) Write note on mid-square hash function. **4**

4. Answer **any two** of the following. **10**
   1) Explain shortest path algorithm.
   2) Write a function to search node from binary search tree.
   3) Explain the technique of merge sort.

5. Answer **any two** of the following. **10**
   1) Explain DFS in detail.
   2) Explain AVL-tree rotations.
   3) Write a program for bubble sort.

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SLR-Z – 27

Seat No.	

B.Sc. (ECS) – II (Semester – IV) (Old) Examination, 2016
Computer Science
Paper – IV : SOFTWARE ENGINEERING – II

Day and Date : Friday, 22-4-2016 Max. Marks : 50
Time : 10.30 a.m. to 12.30 p.m.

Instructions** : 1) **All** questions are **compulsory.
*2) Figures to **right** indicate **full** marks.*

1. Choose correct alternative : **10**

1) Statistics on data element considers _____
   a) Format of data element
   b) Allowable value for that element
   c) Both a) and b)
   d) None of these

2) Implementation involves _____
   a) Training of personnel b) Conversion
   c) Documentation d) All of these

3) CASE stands for_____
   a) Computer Aided Software Engineering
   b) Computer Aided System Engineering
   c) Computer Application System Engineering
   d) Computer Application Software Engineering

4) _____ is decomposition of complex data structures into flat files called relations.
   a) Normalization b) Association
   c) Both a) and b) d) None of these

5) In traditional approach first write, test and debug each module or small group of modules.
   a) True b) False

6) Which of the following is not a 'CASE Tool' ?
   a) Turbo Analyst b) Win Runner
   c) Visual Basic d) Team Work

7) BBT is also called as functional testing.
   a) True b) False

8) _____ is a meaningful association or linkage or connection between entities.
   a) Relationship b) Attributes
   c) Entity d) None of these

9) Which of the following is not a component of a Data Dictionary ?
   a) Version b) Length c) Range d) Aliases

10) Which of the following is not considered during output design ?
   a) Format b) Content
   c) Delay d) Type of Stationary

2. Answer **any five** of the following : **10**

1) What are advantages of Data Dictionary ?
2) What is defect testing ?
3) Discuss statistics on data flow.
4) Define work bench.
5) Mention the basic steps in the data capture process.
6) Write steps in training.

3. A) Answer **any two** of the following : **6**

   1) Explain traditional approach.

   2) Explain role of CASE tools.

   3) Explain need of testing.

   B) Write a note on output considerations. **4**

4. Answer **any two** of the following : **10**

   1) Draw CLD for College Admission System.

   2) Explain White Box Testing (WBT).

   3) Differentiate between Top-down and Bottom-up approach.

5. Answer **any two** of the following : **10**

   1) What is software maintenance ? Discuss the software maintenance activity.

   2) Write various features of Turbo Analyst.

   3) Draw ERD of College Admission System.

SLR-Z – 28

Seat No.	

B.Sc. (ECS) (Part – II) (Semester – IV) Examination, 2016
ORGANIZATION OF PC – II (Paper – V) (Old)

Day and Date : Saturday, 23-4-2016 Max. Marks : 50
Time : 10.30 a.m. to 12.30 p.m.

N.B. : *1) **All** questions are **compulsory**.*
*2) Figures to the **right** indicate **full** marks.*
*3) Neat diagrams must be drawn **wherever** necessary.*

1. Choose correct alternatives : **10**

1) And, OR and flip flops are used in
   a) PLA b) PAL c) FPGA d) PLD

2) Speed of 80286 is up to _____ MHz.
   a) 20 b) 25 c) 10 d) 5

3) The 80486 has _____ kb on chip cache memory.
   a) 64 b) 32 c) 16 d) 8

4) Pentium motherboard have intel _____ chipset.
   a) 945 b) 865 c) 386 d) 286

5) TCP/IP is ____ in network.
   a) software b) hardware c) connector d) hub

6) FDDI uses _____ as physical media.
   a) twisted cable b) coaxial cable
   c) cable d) optical fiber

7) VLSI technology uses _____ no of component in it.
   a) 500 to 1000 b) 5000 to 50000
   c) 10 to 100 d) 500

8) _____ is guided media in transmission of signal.
   a) Radio waves b) Cable c) Microwave d) Infrared light

P.T.O.

9) 80486 has
   a) Coprocessor b) Controller c) NDP d) IOP

10) FPLA uses _____ for logic design.
   a) AND, OR b) OR c) AND d) XOR

2. Attempt **any five** of the following : **10**
   a) Explain TTL subfamilies.
   b) Explain AU of 80286.
   c) Write network goals.
   d) Explain mesh topology.
   e) Explain noise margin.
   f) Compare RISC and CISC.

3. A) Attempt **any two** of the following : **6**
      1) Compare 80286 and 80486.
      2) Explain Programmable Logic Array.
      3) Explain Surface Mount Devices.

   B) Explain Local Area Network. **4**

4. Attempt **any two** of the following : **10**
   1) Explain Network Interface Card.
   2) Explain CPU's for embedded system.
   3) Explain PLD and FPGA.

5. Attempt **any two** of the following : **10**
   1) Explain transmission media of network.
   2) Explain Pentium pro processor.
   3) Explain Programmable Array Logic.

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SLR-Z – 29

Seat No.	

B.Sc. (E.C.S.) Part – II (Semester – IV) (Old) Examination, 2016
Paper – VI : Microprocessors – II

Day and Date : Monday, 25-4-2016 Max. Marks : 50

Time : 10.30 a.m. to 12.30 p.m.

N.B. *: 1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *place indicate* ***full*** *marks.*

1. Choose correct alternatives : **10**

1) The 8086 has _____ Bit addresses bus.
   a) 12 b) 16 c) 20 d) 24

2) To unload the data from stack _____ instruction is used.
   a) PUSH b) POP
   c) HOLD d) HLDA

3) The 8255 works in BSR mode the pin D7 in control word is
   a) 0 b) 1
   c) 4 d) None of these

4) Each general purpose register of 8086 can store _____ bit data.
   a) 12 b) 16 c) 20 d) 24

5) The x86 processor has _____ general purpose registers.
   a) 4 b) 8 c) 12 d) 16

6) NOT is a _____ type instruction.
   a) Data transfer b) Logical
   c) Branch d) Processor control

7) The 8086 microprocessor is _____ pin IC.
   a) 24 b) 40 c) 14 d) 20

8) The _____ control signal provides by the processor to latch the address on the multiplexed address/data bus.
   a) INTR b) ALE c) HOLD d) HLDA

9) XCHG is a _____ type instruction.
   a) Data transfer b) Logical
   c) Branch d) Processor control

10) The 80386 has a _____ Bit system Bus.
   a) 20 b) 32 c) 64 d) 16

2. Attempt **any five** of the following : **10**
   1) Give features of advanced processor.
   2) Explain segment register of 8086.
   3) What is PUSH and POP instructions ?
   4) State different modes of 8253.
   5) Give general purpose register of advanced processor.
   6) Give flag register of 8086.

3. A) Attempt **any two** of the following : **6**
      1) Explain 8253 in brief.
      2) Explain processor control instructions.
      3) Give difference between 8086 and 8088.

   B) Explain addressing modes of advanced processor. **4**

4. Attempt **any two** of the following : **10**
   1) Explain bit manipulation instructions.
   2) Explain 8255 with suitable block diagram.
   3) Explain minimum mode operation of 8086.

5. Attempt **any two** of the following : **10**
   1) What is instruction ? Give classification. Explain program execution transfer instructions.
   2) Explain linear and absolute select decoding.
   3) Explain BIU section of 8086.

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SLR-Z – 30

Seat No.	

B.Sc. (ECS) – II (Semester – IV) (Old) Examination, 2016
ENGLISH – II (Paper – VII)

Day and Date : Tuesday, 26-4-2016 Max. Marks : 50
Time : 10.30 a.m. to 12.30 p.m.

Instructions *: i)* ***All*** *questions are* ***compulsory****.*
ii) Figures to the ***right*** *indicate* ***full*** *marks.*

1. Fill in the blanks in the following sentences by choosing the correct alternatives : **10**

1) STM stands for
   a) Short Terminal Memory b) Short Transfer Memory
   c) Short Term Memory d) Short Test Memory

2) The missing element in the explanation is called as
   a) Emotional view b) Promotional attitude
   c) Emotional intelligence d) Emotional experience

3) Leadership is
   a) The ability to influence a group towards the achievement of goals
   b) The ability to lead mob
   c) The ability to create impression
   d) The ability to impress others

4) Permanent change in _____ is called as learning.
   a) Appearance b) Body language c) Position d) Behaviour

5) A technical skill is an ability _____ relating to a method, process or procedure.
   a) To use methodology
   b) To use a special expertise
   c) To use a non-mechanical expertise
   d) To use specific process

6) Goal setting is essential to _____ weakness.
   a) Undercome b) Overcome c) Overdown d) Operate

P.T.O.

7) The _____ communication is done from appearance and dressing sense.
   a) Verbal b) Non-verbal c) Reading d) Written

8) Which of the following is not a characteristic of good speech ?
   a) Concrete b) Interesting c) Clear d) Confusing

9) The speech given without any preparation is
   a) Group discussion b) Interview
   c) Extempore speech d) Seminar

10) Both children and adults learn a great deal through _____ and _____.
   a) Positive and negative thinking b) Observation and imitation
   c) Experience and practice d) Hypothesis and reasoning

2. Give brief answers to the following questions (**any five**) : **10**

1) What is social ability ?
2) What do you mean by skills ?
3) What is model learning ?
4) What is emotional intelligence ?
5) What is impromptu speech ?
6) Define interview.

3. A) Write short notes on **any two** of the following : **6**

1) Differentiate the preliminary interview and in-depth interview.
2) Explain the concept of team work.
3) State the importance of 'Time sense' in oral communication.

B) Attempt **any one** of the following : **4**

1) Write a note on stress management.
2) How you will create interest in your speech ?

4. Attempt **any one** of the following : **10**

1) What are basic abilities ? Discuss the major types of abilities.
2) What is interview ? Explain the various kinds of interview.

5. What is resume ? What are the characteristics of good resume ? **10**

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SLR-Z – 31

Seat No.	

B.Sc. (ECS) – II (Semester – IV) (New CGPA) Examination, 2016
Paper – I : OPERATING SYSTEM – II

Day and Date : Monday, 18-4-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.00 p.m.

***Instructions** : 1) **All** questions are **compulsory**.*
*2) Figures to the **right** indicate **full** marks.*

1. A) Choose the correct alternative and rewrite the answer : **10**

1) We can use the data structure similar to those used in deadlock prevention _____
   a) allocation matrix b) request matrix
   c) available vector d) all

2) A process larger than the amount of memory allocated to it, we can use _____
   a) Overlays b) Address binding
   c) Dynamic loading d) Request routine

3) Demand paging is a _____ system.
   a) CPU scheduling b) Job scheduling
   c) Virtual memory d) Trashing

4) To allow only one user to work with a particular file at a particular time one have to use _____
   a) Semaphore b) Critical region
   c) Locking d) Dedicated mode

5) _____ would never suffer from Belady's anomaly.
   a) FIFO b) LFU
   c) LRU d) Optimal page replacement

6) A page table is used for _____
   a) Searching a file
   b) Contents of file
   c) Converting logical to physical address
   d) Demand paging

7) _____ allocation method does not support direct access.

a) Indexed b) Linked

c) Contiguous d) Grouping

8) The program contain boot block that loads Kernel into memory called _____

a) Master boot program b) Disk boot strap

c) Shell program d) Super block

9) _____ is a logical view of physical storage.

a) File b) Graph

c) Page table d) Linked list

10) The processes in sleep state wakeup and enter in _____ state.

a) Ready to run b) Running

c) Swapped d) Zombie

B) State **true** or **false** : **4**

1) The code and data for Kernel reside in the memory permanently and all process shares it.

2) A directory is useful in taking backup of files.

3) Segmentation is supportive to the user's view of memory.

4) Deadlock prevention is same as deadlock avoidance.

2. Answer **(any 7)** : **14**

1) List various file attributes.

2) Write the disadvantages of the buffer cache.

3) What is deadlock ?

4) Define logical and physical address.

5) Explain the term virtual memory.

6) Write an algorithm for reading a disk block.

7) What is trashing ?

8) Explain the sleep state of the process.

3. A) Answer **(any 2)** : **10**

   1) Explain the File System in UNIX O.S.

   2) Write the methods of process Termination and Resource Preemption in the recovery from deadlock.

   3) Explain the processing of user program before execution.

   B) Explain various types of File Access methods. **4**

4. Answer **(any 2)** : **14**

   1) Explain saving the context of a process in UNIX O.S.

   2) Write a note on Deadlock Avoidance.

   3) Explain the difference between MFT and MVT. What is compaction in memory management ?

5. Answer **(any 2)** : **14**

   1) Write a note on Paging.

   2) Explain Acyclic graph directory and General graph directory.

   3) Explain the structure of Buffer Header and Buffer Pool.

SLR-Z – 32

Seat No.	

B.Sc. (ECS) – II (Semester – IV) (New – CGPA) Examination, 2016
Paper – II OBJECT ORIENTED PROGRAMMING USING C++ – II

Day and Date : Wednesday, 20-4-2016 Max. Marks : 70

Time : 10.30 a.m. to 1.00 p.m.

Instructions *: 1)* ***All*** *questions are* ***compulsory****.*

2) Figures to the ***right*** *indicate* ***full*** *marks.*

1. Choose correct alternatives : **14**

1) When a child class inherits traits (qualities) from more than one parent class, this type of inheritance is called _____ inheritance.

A) Hierarchical B) Hybrid

C) Multilevel D) Multiple

2) The derivation of Child class from Base class is indicated by _____ symbol.

A) :: B) :

C) ; D) |

3) To perform File I/O operations, we must use _____ header file.

A) <ifstream> B) <ofstream>

C) <fstream> D) None of the above

4) What is meant by ofstream in CPP ?

A) Writes to a file B) Reads from a file

C) Both A and B D) None of the mentioned

5) Pick out the correct objects about the instantiation of output stream.

A) cout B) cerr

C) clog D) all of the mentioned

6) In CPP programming '/a' is used for

A) Alter text B) Line break

C) Select all D) Alarm

P.T.O.

7) Which of the following is required to write and run CPP program ?
   A) Compiler B) Text Editor
   C) Operating system D) All of the mentioned
8) During a class inheritance in CPP, if the visibility mode or mode of derivation is not provided, then by default visibility mode is
   A) Public B) Protected
   C) Private D) Friend
9) Can struct be used as Base class for inheritance ?
   A) Yes B) No
10) To create an output file stream, we must declare the stream to be of class
   A) ofstream B) ifstream
   C) iostream D) none of these
11) Which of the following statements is correct ?
   A) Base class pointer cannot point to derived class
   B) Derived class pointer cannot point to base class
   C) Pointer to derived class cannot be created
   D) Pointer to base class cannot be created
12) CPP exception handling mechanism uses how many keywords ?
   A) Four B) Three
   C) Two D) None of the above
13) Which function return the current position of the get or put pointer in bytes ?
   A) tellg() B) tellp()
   C) tell() D) Both A) and B)
14) It is not possible to combine two or more file opening mode in open() method.
   A) Yes B) No

2. Solve **any seven** : **14**
   1) Define virtual class.
   2) What is meant by file ?
   3) Name the default standard streams in CPP.
   4) What do you mean by this pointer ?
   5) What is the role of file opening mode ios::trunk ?
   6) Are exceptions and error same ? Give an explanation.
   7) What is a file mode ?
   8) When catch (....) handler is used ?
   9) List out the access specifiers used in CPP.

3. A) Solve **any two** : **10**

   1) Explain command line argument with example.

   2) Draw a visibility table of inherited members which simplified view of access control to the members of a class.

   3) Write a program which demonstrates the error handling mechanism during a file operation.

   B) Write a program to access members of student class using pointer to object members. **4**

4. Solve **any two** : **14**

   1) Explain in detail various inheritance categories used in CPP programming language in detail.

   2) Explain exception handling model of CPP with a suitable example.

   3) Write a program which copies the contents of one file to new file by removing unnecessary spaces between words.

5. Solve **any two** : **14**

   1) Explain class template with suitable example.

   2) Explain pure virtual function with its suitable example.

   3) Explain console stream classes and file stream classes in detail.

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SLR-Z – 33

Seat No.	

B.Sc. (ECS) (Part – II) (Semester – IV) Examination, 2016
COMPUTER SCIENCE (Paper – III)
Data Structure and Algorithms – II
(New CGPA Pattern)

Day and Date : Thursday, 21-4-2016 Total Marks : 70
Time : 10.30 a.m. to 1.00 p.m.

***Instructions** : 1) **All** questions are **compulsory**.*
*2) Figures to the **right** indicate **full** marks.*

1. A) Choose the correct alternatives : **10**

1) To search element in binary tree we require _____ time.
a) O ($\log_2 n$) b) O (nlogn) c) O (l) d) O (n^2)

2) At level L, maximum number of nodes in complete binary tree is _____
a) $2^L + 1$ b) $2^L - 1$ c) 2^L d) 2^{L+2}

3) In case of complete binary tree left and right child of any node has position _____ and _____ respectively.
a) 2N and 2N + 1 b) 2N + 1 and 2N
c) 2N + 1 and 2N + 2 d) 2N + 2 and 2N + 1

4) Out degree of Sink node is _____
a) 0 b) 1 c) –1 d) All of these

5) Quick sort also known as _____
a) Partition Support Sort b) Partition Sequential Sort
c) Partition Creation Sort d) None of these

6) In case of DFS we use _____
a) Stack b) Queue
c) Either a) or b) d) Both

7) Hashing has _____ time required to search element.
a) O (n) b) O (n^2) c) O (l) d) None of these

P.T.O.

8) Visiting each and every node is known as _____
   a) Searching b) Traversing c) Sorting d) All of these

9) Two main measures for the efficiency of an algorithm are _____
   a) Processor and Memory b) Complexity and Capacity
   c) Time and Space d) Data and Space

10) Which of the following case does not exist in complexity theory ?
   a) Best b) Worst c) Average d) Null

B) State the following statements **true/false** : **4**

1) Hashing suffers from collision.
2) If there is cycle in graph then topological sorting is possible.
3) Tree can be represented by using array.
4) Binary search is always better than linear search.

2. Solve **any 7** from the following : **14**

1) Define tree. State subset relationship between tree and graph.
2) Define articulation point and bridge.
3) Draw diagrams for regular and complete graph and state relationship between them.
4) What is difference between B – tree and B + tree ?
5) Give application of graph.
6) Write application of Sorting.
7) Explain linked representation of binary tree with node structure.
8) Explain node structure of vertex and edge in case of adjacency list.
9) Write basic difference between linear and binary search.

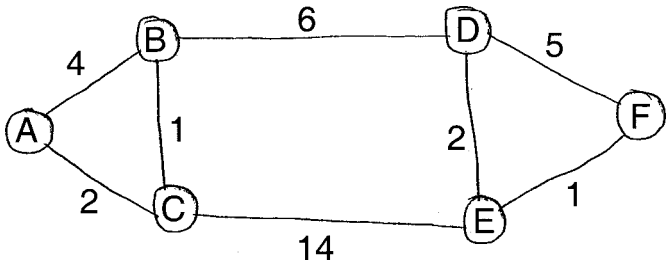
3. A) Attempt **any two** : **10**

1) Explain Binary search tree with its example.
2) What is AVL tree ? What do you mean by A, V and L ? State balancing factor.
3) What is adjacency matrix ? Explain process of inserting edge into adjacency matrix. When is it better to choose adjacency list rather than adjacency matrix ?

B) Write algorithm for sequential search in both cases static and dynamic. **4**

4. Attempt **any two** : **14**

   1) Calculate Shortest Path from following graph using Disjkstra's shortest path algorithm.



   2) Create B-tree from following data. (Use order 5).
      10, 70, 60, 20, 110, 40, 80, 130, 100, 50, 190, 90, 180, 240, 30, 120, 140, 160.
   3) Write step by step procedure to sort following data by using insertion sort.
      82, 42, 49, 8, 92, 25, 59, 52.

5. Attempt **any two** : **14**

   1) Write a program to implement binary search.
   2) Write a program to create adjacency matrix.
   3) Write a program to implement bubble sort.

SLR-Z – 34

Seat No.	

B.Sc. (ECS) – II (Semester – IV) (New CGPA) Examination, 2016
SOFTWARE ENGINEERING – II
Computer Science (Paper – IV)

Day and Date : Friday, 22-4-2016

Time : 10.30 a.m. to 1.00 p.m. Max. Marks : 70

***Note** : 1) **All** questions are **compulsory**.*

*2) Figures to the **right** indicate **full** marks.*

1. Choose the correct alternative. **14**

1) The testing in which code is checked

a) Black box testing b) White box testing

c) Red box testing d) Green box testing

2) Data Flow Diagrams are used for

a) Process modelling

b) Modelling interactions in a real time environment

c) Data modelling

d) None of these

3) Classification of software maintenance include

a) Corrective maintenance

b) Adaptive maintenance

c) Perfective maintenance

d) All of these

4) In _____ errors can be detected and isolated on a functional basis.

a) CASE b) IPO c) HIPO d) W-O diagram

5) _____ tools assist in the planning, development and control in CASE.

a) Dynamic measurement b) Data Acquisition

c) Test management d) Cross-functional tools

P.T.O.

6) _____ are data structures in motion.
   a) Data element b) Data flows c) Data store d) None

7) _____ are single declarative statements that denote a single step or action in process.
   a) Sequential structures b) Decision structures
   c) Looping structures d) None

8) _____ Normal form is related to functional dependency.
   a) First b) Second c) Third d) BCNF

9) _____ output is used in computer department.
   a) Operational b) Interactive c) External d) Turnaround

10) A zero level DFD describes
   a) The fully blown up system design
   b) Data flow in all the modules
   c) Overview of processes, inputs and output
   d) None of these

11) _____ maintenance is performed in response to software failure.
   a) Adaptive b) Corrective c) Preventive d) Perfective

12) _____ is the process of translating the source document into machine readable format.
   a) Data capture b) Data input c) Data collection d) Data entry

13) Data dictionary is also called as
   a) Catalog b) Central repository
   c) Both a) and b) d) None

14) The basic tool used in structured design is a
   a) Structured chart b) Data flow diagram
   c) ER diagram d) Program flowchart

2. Answer the following (**any 7**) : **14**

1) What are the objectives of testing ?
2) Why DFD and data dictionary are complement to each other ?
3) Write uses of data dictionary.
4) What is pareto principle ?

5) What is drawback of CASE tools ?
6) Distinguish between structure chart and flow chart.
7) What is pilot approach ?
8) What are the types of output ?
9) What is process specification method ?

3. A) Answer the following (**any 2**) : **10**
   1) Explain entity relationship analysis with an example.
   2) Write a short note on setting subsystem boundaries.
   3) Differentiate physical and logical DFD.

   B) Explain advantages and disadvantages of HIPO. **4**

4. Answer the following (**any 2**) : **14**
   1) Explain white box testing.
   2) What are taxonomy of CASE tools ?
   3) What is normalization ? Explain in detail.

5. Answer the following (**any 2**) : **14**
   1) Draw a DFD and ER diagram for college payroll system.
   2) What is collecting system statistics ?
   3) What is a data capture ? Explain basic steps of data capture.

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SLR-Z – 35

Seat No.	

B.Sc. (ECS) – II (Semester – IV) (New CGPA) Examination, 2016
ORGANIZATION OF PC – II (Paper – V)

Day and Date : Saturday, 23-4-2016 Max. Marks : 70
Time : 10.30 a.m. to 1.00 p.m.

Instructions : *1)* ***All*** *questions are* ***compulsory****.*
2) Draw ***neat*** *diagram* ***whenever*** *necessary.*
3) Figures to the ***right*** *indicate* ***full*** *marks.*

1. Choose correct alternatives. **14**

1) _____ is first processor MMX technology introduced.

a) 80386 b) 80486 c) 80186 d) Pentium

2) In OSI reference model Layer – 1 is

a) Network b) Physical
c) Data link d) Application

3) The FAN OUT of TTL IC is

a) 10 b) 50 c) 100 d) 2

4) In OSI reference model _____ layers are used.

a) 7 b) 5 c) 6 d) 8

5) _____ is a network layer device which enables computers to communicate with one another across an internetwork.

a) Router b) Brouters
c) Switch d) Bridge

6) _____ is the fastest logic family.

a) TTL b) CMOS c) RTL d) ECL

7) CISE stands for
   a) computer instruction set computer
   b) complex instruction set computer
   c) content instruction set computer
   d) none of these

8) The _____ is programmable logic device.
   a) FPGA b) CPLD c) PGA d) PLD

9) _____ is a token based technology using fiber optic link.
   a) NIC b) NAC c) FDDI d) None of these

10) _____ is the first intel processor with internal cache memory.
   a) 80286 b) 80386 c) 80486 d) 80586

11) The pentium pro processor introduced in
   a) 1985 b) 1990 c) 1995 d) 2000

12) In LAN _____ protocols is/are used.
   a) 1 b) 3 c) 4 d) 6

13) The CPU socket used in a latest motherboard intel 865 chipset are
   a) LGA 775 b) LGA 778 c) LGA 780 d) LGA 800

14) The _____ is a small box that gathers the signal from each individual device.
   a) HUB b) Repeaters c) Bridges d) None

2. Answer **any seven** of the following. **14**

1) State different goals of network.

2) Explain power dissipation in IC family.

3) Explain features of 80286.

4) What is RISC ?

5) Explain switch used in network.

6) What is FANOUT ?

7) Explain HOLD and HLDA signals in 80286.

8) Give methods of networking.

9) Explain MOS logic family.

3. A) Attempt **any two** of the following. **10**

   1) State and explain transmission media used in network.

   2) Explain SMT and SMD in brief.

   3) Write a note on Pentium processor.

   B) Give difference between TTL and MOS logic family. **4**

4. Answer **any two** of the following. **14**

   1) Explain with suitable diagram PAL.

   2) State and explain different signals used in 80486.

   3) Explain different structures of network.

5. Answer **any two** of the following. **14**

   1) Explain with suitable diagram CPLD.

   2) State and explain different topology used in network.

   3) Draw internal organization of 80286. Explain its address unit.

SLR-Z – 36

Seat No.	

B.Sc. (ECS) – II (Semester – IV) (New CGPA) Examination, 2016
Paper – VI : MICROPROCESSOR – II

Day and Date : Monday, 25-4-2016 Total Marks : 70

Time : 10.30 a.m. to 1.00 p.m.

Instructions : *1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *place indicate* ***full*** *marks.*

1. Multiple choice questions : **14**

1) _____ addressing mode uses zero byte instruction.
a) Implicit b) Register c) Direct d) Immediate

2) _____ instruction are used to send the data from memory to port.
a) IN b) OUT c) MOV d) Transfer

3) _____ is a area where instruction can be prefetched from memory and stored here.
a) Stack b) Accumulator
c) Queue d) None of these

4) _____ register are used to store instructions.
a) Stack pointer b) Program counter
c) Instruction register d) None of these

5) _____ is program used to translate assembly language mnemonics to the correct binary code for each instruction.
a) Assembler b) Linker
c) Debugger d) Compiler

6) 8255 PPI uses _____ ports.
a) 2 b) 3 c) 4 d) 5

7) Mode 3 of 8253 used for _____ generator.
a) Sinewave b) Triangular wave
c) Square wave d) None of these

P.T.O.

8) 80286 used in _____ and _____ mode.
   a) Real and fake b) Real and artificial
   c) Real and protected d) Real and unprotected

9) _____ processor integrated floating point unit for first time in X86 history.
   a) 80186 b) 80286
   c) 80386 d) 80486

10) _____ instruction replaces the number in a destination with 2's complement of that number.
   a) NEG b) DEC
   c) AAA d) None of these

11) The 8086 has _____ byte instruction queue.
   a) 4 b) 6
   c) 8 d) 12

12) The 8086 has _____ memory addressing capacity.
   a) 32 kb b) 64 kb
   c) 1 MB d) None of these

13) The 8086 worked in maximum mode when its MN/$\overline{MX}$ pin is connect to
   a) VCC b) Ground
   c) VEE d) Crystal

14) _____ is a processor control instructions.
   a) STC b) REP
   c) INT d) None of these

2. Answer **any seven** of the following : **14**
   1) What is paging ?
   2) What is bootloader ?
   3) What is hyper threading technology in Pentium – IV ?
   4) Draw block diagram of IC 8255.
   5) What is addressing modes ?
   6) Give instruction names of data transfer group.
   7) Give features of 80286.
   8) What is function of stack pointer register ?
   9) Compare between 8086 and 8088.

3. A) Answer **any two** of the following : **10**
   1) Explain features of 8086.
   2) Explain arithmetic instructions of 8086.
   3) Explain block diagram of 8257 DMA controller.

   B) Explain register model of 8086. **4**

4. Attempt **any two** of the following : **14**
   1) Explain block diagram of 8086 architecture.
   2) Explain instruction from program execution transfer group.
   3) Compare I/O mapped I/O and memory mapped I/O.

5. Attempt **any two** of the following : **14**
   1) Explain minimum mode of 8086.
   2) Explain block diagram of 8259 programmable interrupt controller.
   3) Explain types of addressing modes in 8086 microprocessor.

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Seat No.	

B.Sc. (ECS) – III (Semester – V) (New) Computer Science Examination, 2016
DATA COMMUNICATIONS AND NETWORKING – I (Paper – I)

Day and Date : Thursday, 31-3-2016 Total Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

Instructions : *1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *indicate* ***full*** *marks.*

1. Choose the correct alternatives : **10**

1) In computer network nodes are
   a) the computer that originates the data
   b) the computer that routes the data
   c) the computer that terminates the data
   d) all of the mentioned

2) Which layer is responsible for process to process delivery ?
   a) network layer b) transport layer
   c) session layer d) data link layer

3) Physical layer provides
   a) mechanical specifications of electrical connectors and cables
   b) electrical specification of transmission line signal level
   c) specification for IR over optical fiber
   d) all of these

4) CRC stands for
   a) cyclic redundancy check b) code repeat check
   c) code redundancy check d) cyclic repeat check

5) Which one of the following routing algorithm can be used for network layer design ?
   a) shortest path algorithm b) distance vector routing
   c) link state routing d) all of these

P.T.O.

6) Which of this is not a guided media ?
   a) Fiber optical cable b) Coaxial cable
   c) Wireless LAN d) Copper wire

7) This topology requires multipoint connection
   a) Star b) Mesh c) Ring d) Bus

8) In TDM, slots are further divided into
   a) Seconds b) Frames
   c) Packets d) None of these

9) What is internet ?
   a) a single network
   b) a vast collection of different networks
   c) interconnection of local area networks
   d) none of these

10) The structure or format of data is called
   a) Syntax b) Semantics
   c) Struct d) None of these

2. Answer **any five** of the following : **10**
   1) Define Internet.
   2) Explain types of error.
   3) What is framing ?
   4) Explain Analog Vs Digital Signal.
   5) Define Standards.
   6) What is meant by flooding ?

3. A) Answer **any two** of the following : **6**
   1) Explain the data representation.
   2) Define the terms Phase, Amplitude, Frequency.
   3) Explain error control in data link layer.

   B) Explain design issues of Network layer. **4**

4. Write **any two** of the following : **10**

   1) What is Multiplexing ? Explain frequency division multiplexing.

   2) Explain stop-and-wait ARQ protocol.

   3) Explain TCP/IP reference model in detail.

5. Write **any two** of the following : **10**

   1) Write a note on satellite communication.

   2) Explain CSMA/CA in detail.

   3) Explain shortest path routing in detail.

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Seat No.	

B.Sc. (ECS) – III (Semester – V) (New) Examination, 2016
Paper – II : DATABASE MANAGEMENT SYSTEM – I

Day and Date : Friday, 1-4-2016 Max. Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

Instructions *: 1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *place indicate* ***full*** *marks.*

1. Choose correct alternative. **10**

1) Create, alter and drop are
   a) Data definition language b) Data manipulation language
   c) Data control language d) None of above
2) The number of tuples in the relation is
   a) Cardinality b) Degree
   c) Sum d) None of above
3) Which SQL statement is used to delete data from a database ?
   a) DELETE b) TRUNCATE
   c) REMOVE d) None of above
4) The process of decomposition of a table is known as _____
   a) Specialization b) Generalization
   c) Normalization d) None of the above
5) An ER model was introduced by _____
   a) E. F. Codd b) P. P. Chen
   c) James Gosling d) Ken Thomson
6) Function that acts on set of values is called
   a) aggregate function b) scalar function
   c) row set function d) none of these
7) The relationship between weak entity set and strong entity set is called _____
   a) Weak relationship b) Identifying relationship
   c) Connecting relationship d) None of above

8) Select '3+7' from dual
   a) 3+7 b) 3 c) 10 d) 7
9) Which of the following is a problem of file management system ?
   a) lack of data independence b) data redundancy
   c) program dependence d) all of above
10) Select 'database' from dual where 1=null; result is
   a) database b) false
   c) true d) no rows selected

2. Answer the following (**any five**) : **10**
   1) Define foreign key.
   2) Define super key.
   3) Explain select operation of relational algebra.
   4) Explain data definition language.
   5) Explain use of check constraint.
   6) What is dense index ?
   7) Define instance and schema of database.

3. A) Answer **any two** of the following : **6**
      1) Explain count (*), sum and max aggregate functions.
      2) Explain users of database system.
      3) What is logical data independence ? Explain.
   B) Write a note on aggregation. **4**

4. Answer **any two** of the following : **10**
   1) What is join ? Explain outer join.
   2) Explain group by and having close.
   3) Explain relational data model.

5. Answer **any two** of the following : **10**
   1) Explain different types of attributes.
   2) Explain different notations in E-R model.
   3) What is normalization ? Explain 2^{nd} and 3^{rd} normal form.

SLR-Z – 40

Seat No.	

B.Sc. (ECS) (Part – III) (Semester – V) (New) Examination, 2016
COMPUTER SCIENCE (Paper – III)
Core Java

Day and Date : Saturday, 2-4-2016 Total Marks : 50

Time : 2.30 p.m. to 4.30 p.m.

***Instructions** : 1) **All** questions are **compulsory**.*

*2) Figures to the **right** indicate **full** marks.*

1. Choose the correct alternatives : **10**

1) What is stored in the object obj in following lines of code ?

box obj;

a) Memory address of allocated memory of object

b) NULL

c) Any arbitrary pointer

d) Garbage

2) How many classes we are able to extend in java ?

a) One b) Two

c) Three d) Any number of

3) _____ prevents a method in a super class from being overridden by its subclass.

a) Super b) Abstract

c) Static d) Final

P.T.O.

4) Which of these access specifier can be used for a class so that its members can be accessed by a different class in the different package ?

a) Public b) Protected

c) Private d) No Modifier

5) All exception classes inherit _____ class.

a) Exception b) Error

c) Throwable d) All of these

6) Suspend thread can be revived by using

a) Start() b) Suspend() c) Resume() d) Yield()

7) Which of these classes is used for input and output operation when working with bytes ?

a) InputStream and OutputStream b) Reader and Writer

c) Both a) and b) d) None of these

8) Which of the following package stores all the standard java classes ?

a) Lang b) Java

c) Util d) Java.packages

9) Which of these packages contains all the classes and methods required for event handling in Java ?

a) Java.applet b) Java.awt

c) Java.event d) Java.awt.event

10) Which of the class is necessary to implement datagrams ?

a) DatagramPacket b) DatagramSocket

c) Both a) and b) d) None of these

2. Solve **any five** : **10**

1) Explain java as a platform independent.

2) Explain the use of static keyword.

3) Explain the use of final keyword.

4) What is exception ? What are the types of exception ?

5) Explain the use of Runnable interface.

6) Explain any two wrapper classes.

3. A) Solve **any two** : **6**

1) Explain Java environment and tools.

2) Explain different event listeners and adapters.

3) Explain any two Character Stream classes.

B) Explain method overriding with example. **4**

4. Solve **any two** : **10**

1) Write a program to demonstrate user defined exception.

2) Write a program to demonstrate multiple inheritance by the use of interface.

3) Explain thread life cycle.

5. Solve **any two** : **10**

1) Write a program to demonstrate Inet Address.

2) Explain the use of super keyword with example.

3) Explain different types of layout managers.

SLR-Z – 41

Seat No.	

B.Sc. (ECS) – III (Semester – V) (New) Examination, 2016
THEORY OF COMPUTER SCIENCE (Paper – IV)

Day and Date : Monday, 4-4-2016 Max. Marks : 50

Time : 2.30 p.m. to 4.30 p.m.

Instructions *: 1)* ***All*** *questions are* ***compulsory****.*
2) ***All*** *questions carry* ***equal*** *marks.*

1. Choose correct alternatives : **10**

1) Pumping lemma is used to proving given language is _____
   a) irregular b) context sensitive
   c) restricted d) none of these

2) Function which mapping one to one from input to state such function is known as _____ function.
   a) Machine b) State c) Both a and b d) None of these

3) The ordered pair of relation is known as _____
   a) set b) alphabet c) relation d) string

4) If rightmost and leftmost production is single non-terminal then it is known as _____ production.
   a) unit b) self c) cross d) none of these

5) The context free language is not closed under _____
   a) union b) intersection
   c) set difference d) none of these

6) The Regular Expression for Arden's algorithm is _____
   a) $R_{ij}^{(k)}$ b) R = Q + RP c) Both a and b d) None of these

7) The (a/b) is rule used for conversion of RE to NFA with $\in$-moves is used for _____
   a) alternative b) closure
   c) positive closure d) series

P.T.O.

8) A finite automaton with stack is known as _____

a) FA b) TM c) DFA d) PDA

9) DFA is more powerful than PDA

a) True b) False

10) In PDA one situation has more than one transition then it is known as _____

a) TM b) DPDA c) NPDA d) Stack

2. Solve **any five** of the following : **10**

1) Explain closure properties of relation.

2) Define :

a) RE

b) Language.

3) What is the context free grammar for (a+b)*.abc.(a+b)* ?

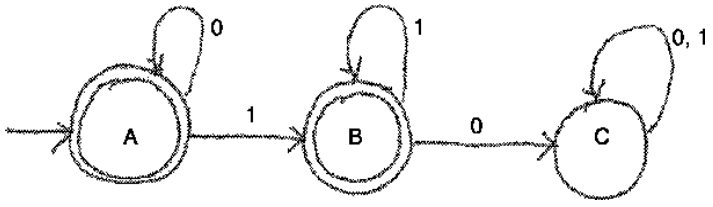
4) Give pictorial representation of PDA.

5) Define Turing Machine.

6) How many ways PDA accept language ? Give the names.

3. A) Solve **any one** : **6**

1) Construct RE for following DFA by using $R_{ij}^{(K)}$.



2) Explain simplification of grammar.

3) Design TM for $L = \left\{ a^n b^n \mid n > 1 \right\}$.

B) Construct F.A. equivalent to R.E. **4**

(a/b)* (aa+bb)* (a/b)*

4. Solve **any two** of the following questions : **10**

   1) What is pumping lemma ? Using pumping lemma check $\{a^p | p \text{ is prime}\}$ is regular or not.

   2) Find a grammar in GNF equivalent to grammar E -> E+T|T, T->T*F|F, F ->(E)|a.

   3) Construct DFA for find out given binary number is divisible by 3.

5. Solve **any two** of the following questions : **10**

   1) Check whether the following grammar is ambiguous or not; if ambiguity found remove the ambiguity and rewrite an equivalent grammar.

      S ->iCtS|iCtSeS|a,C ->b

   2) Construct Mealy machine for 2's complement of binary number and convert it into Moore machine.

   3) Explain closure properties of regular expression with example.

SLR-Z – 42

Seat No.	

B.Sc. (ECS) – III (Semester – V) (New) Examination, 2016
(Paper – V) : COMPUTER SCIENCE
Web Technology and E-Commerce – I

Day and Date : Tuesday, 5-4-2016 Max. Marks : 50

Time : 2.30 p.m. to 4.30 p.m.

Instructions *: 1)* ***All*** *questions are* ***compulsory****.*
2) ***All*** *questions carry* ***equal*** *marks.*

1. Choose Correct Alternatives : **10**

1) _____ is used for Once-off transaction.
   a) Internet Commerce b) EDI
   c) E-Market d) All of these

2) To select multiple ListItem from ListBox _____ attribute is used.
   a) SelectionMode b) SelectItem
   c) Grouping d) SelectMode

3) ValidationSummary control use _____ Attribute of validation control to list error into it.
   a) Text b) ErrorMessage
   c) SelectText d) ErrorText

4) FileUpload server control use _____ method to save file on the server.
   a) Save() b) Upload()
   c) ServerSave() d) SaveAs()

5) DropDownList has _____ Event from following.
   a) OnTextChanged b) OnSelectedIndexChanged
   c) Both (a) and (b) d) OnListSelected

6) EDI is used for _____ Transaction.
   a) Regular, Repeat b) Irregular
   c) Irregular, once-off d) Irregular, Repeat

7) As a result of Technology, buyer power has increased in most industries.
   a) True b) False

P.T.O.

8) _____ segment focuses on consumers dealing with each other.
   a) B2B b) B2C
   c) C2B d) C2C

9) _____ is used to transfer computer to computer transaction information contained in standard business document.
   a) Internet Commerce b) E-market
   c) EDI d) None of these

10) _____ from the following are application folders.
   a) Bin b) App_Theme
   c) Both (a) and (b) d) None of the above

2. Explain following (**any 5**) : **10**
   1) Define E-Commerce. List four 'P's.
   2) Explain type of E-Commerce.
   3) Explain Page structure option used for asp.net.
   4) Explain Trade cycle with its type.
   5) List location option used for asp.net application.
   6) Explain use of causes validation and ValidationGroup Attributes.

3. A) Attempt **any two** from following : **6**
   1) Explain different type of postback used in asp.net.
   2) Explain inter organizational value chain.
   3) Explain AdRotator with example that uses KeywordFilter Attribute.

   B) Explain Directive. Write a code for WebForm that uses WebUserControl. **4**

4. Attempt **any two** from following : **10**
   1) Define Supply Chain. Explain Porter's value chain model in detail.
   2) Explain Validation. Write a code for client and server side custom validation that accept only odd number.
   3) Define E-Commerce. Explain scope of E-Commerce.

5. Attempt **any two** from following : **10**
   1) Explain Porter's model for competitive advantages.
   2) Why we use application folder ? Write a code to check whether given number is prime using App_Code Folder.
   3) Explain .net Framework in detail.

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SLR-Z – 43

Seat No.	

B.Sc. (ECS) – III (Semester – V) (New) Examination, 2016
COMPUTER SCIENCE (Paper – VI)
Visual Programming and Application Software – I

Day and Date : Wednesday, 6-4-2016 Max. Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

***Instructions** : 1) **All** questions are **compulsory**.*
*2) Figures to the **right** indicate **full** marks.*

1. Choose correct alternatives : **10**

1) The conversion from an reference type to a values type is known as boxing.
   a) True b) False

2) CTS stands for _____
   a) Common Type System b) Combine Type Specification
   c) Code Type Specification d) Common Type Specification

3) Char is a _____ type.
   a) Reference b) Value c) Int d) All of these

4) Which of the following is not a .NET Exception class ?
   a) Exception b) StackMemoryException
   c) DivideByZeroException d) OutOfMemoryException

5) _____ method terminates the execution of thread.
   a) abort() b) start() c) suspend d) sleep()

6) All the stream classes are defined within the _____ namespace.
   a) System.IO b) System.Exception
   c) System.Collections d) None of these

7) _____ keyword refers to the current instance of a class.
   a) base b) value c) this d) volatile

8) _____ keyword is used to prevent a class from being inherited.
   a) this b) sealed c) final d) none of these

P.T.O.

9) Defining a methods in base class and subclass with a same name and same signature is called _____

a) Overloading b) Multiplexing c) Overriding d) None of these

10) .net framework defines two types of threads foreground and background.

a) True b) False

2. Answer **any five** of the following : **10**

1) What is jagged array ?
2) Give the use of finally keyword.
3) List the functions of CLR.
4) Define Garbage Collection.
5) Give the use of for each loop.
6) What is an assembly ?

3. A) Answer **any two** of the following : **6**

1) What is thread ? Give an example of Thread Priorities.
2) What is constructor ? Give an example of Copy Constructor.
3) Explain indexer with an example.

B) Write a program to copy characters from one file to another file. **4**

4. Answer **any two** of the following : **10**

1) Write a program to handle custom exception.
2) Explain the parameter passing techniques.
3) What is interface ? Give one example of interface.

5. Answer **any two** of the following : **10**

1) What is reflection ? Explain System.Type Class with its property.
2) Explain Enum with suitable example.
3) What is Operator Overloading ? Write a program to overload unary ++ operator.

_____

SLR-Z – 44

Seat No.	

B.Sc. (ECS) – III (Semester – V) (Old) Examination, 2016
DATA COMMUNICATIONS AND NETWORKING – I (Paper – I)

Day and Date : Thursday, 31-3-2016 Max. Marks : 50

Time : 2.30 p.m. to 4.30 p.m.

Instructions *: 1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *indicate* ***full*** *marks.*

1. Choose the correct alternative : **10**

1) A set of rules for exchanging data between communicating machine is called
   a) Entity b) Gateway c) Protocol d) Layer

2) _____ topology requires the maximum number of I/O ports.
   a) Mesh b) Bus c) Ring d) Star

3) Synchronous transmission doesn't have
   a) A start bit b) A stop bit
   c) Gaps between bytes d) All of the above

4) Data link layer divides the stream of bits into
   a) Blocks b) Frames c) Packets d) Segments

5) Data synchronization is a function related with
   a) Session layer b) Physical layer
   c) Data link layer d) Transport layer

6) Manchester is a type of _____ encoding.
   a) Polar b) Biphase and polar
   c) Biphase d) None of the above

7) Sink tree will generate in _____ routing algorithm.
   a) Flooding b) Distance vector
   c) Shortest path d) Optimality principle

P.T.O.

8) _____ represents agreement between communication devices.
   a) Message b) Transmission medium
   c) Protocol d) None of the above

9) In _____ the signal changes its form or shape.
   a) Distortion b) Attenuation c) Noise d) All of the above

10) _____ primitive is used to accept incoming connections.
   a) CONNECT b) LISTEN c) DISCONNECT d) SEND

2. Answer the following (**any 5**) : **10**
   1) Mention the advantages and disadvantages of star topology.
   2) Which are the types of errors ?
   3) What is an analog and digital signal ?
   4) What is meant by flooding ?
   5) Which functionalities are offered by Data link layer ?
   6) What is a amplitude modulation ?

3. A) Answer the following (**any 2**) : **6**
   1) Which are the various functions of presentation layer ?
   2) What is meant by piggybacking ?
   3) Which are the various data communication standards ?

   B) Explain the components of data communications system. **4**

4. Answer the following (**any 2**) : **10**
   1) Explain pulse coded modulation in detail.
   2) Which are various design issues for layers ?
   3) Explain the difference between virtual circuit and datagram subnet.

5. Answer the following (**any 2**) : **10**
   1) Explain fibre optical cable in detail.
   2) Explain various congestion prevention policies.
   3) Explain Checksum Check in detail.

SLR-Z – 45

Seat No.	

B.Sc. (ECS) – III (Semester – V) (Old) Examination, 2016
DATABASE MANAGEMENT SYSTEM – I (Paper – II)

Day and Date : Friday, 1-4-2016 Max. Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

N.B. : *1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *indicate* ***full*** *marks.*

1. Choose correct alternative. **10**

1) Which of the following is not integraty constraint ?
a) not null b) positive c) unique d) none of these

2) Which of the following creates virtual relation for storing the query ?
a) function b) procedure
c) view d) none of these

3) The relational database model was created by EF codd.
a) True b) False

4) A _____ query that retrieves the rows from more than one table or view.
a) join b) end
c) start d) all of mentioned

5) Null value is equivalent to zero
a) True b) False

6) Which of following is not an aggregate function ?
a) min b) max c) select d) arg

7) Relational database consist of collection of
a) tables b) fields c) records d) keys

8) The term _____ is used to refer to row.
a) attribute b) tuple c) field d) instant

9) The helping of people keep track of things is the purpose of
   a) database b) table
   c) relationship d) none of these

10) Which of the following is used to define the structure of relation, deleting relation and relating schema.
   a) DML b) DDL
   c) query d) relational schema

2. Answer **any five** of the following. **10**
   1) List out the components of DBMS.
   2) State the role of DBA.
   3) Write the syntax of select clause.
   4) Define entity set.
   5) Define normalization.
   6) What are the use of primary key ?

3. A) Answer **any two** of the following. **6**
   1) Explain the DCL.
   2) Describe order by clause with e.g.
   3) Explain inner join with e.g.

   B) Define nested query. Explain with the help of example. **4**

4. Solve **any two** of the following. **10**
   1) Explain the symbols used in ER model.
   2) Explain any three aggregate function used in SQL.
   3) Explain different operations in file.

5. Solve **any two** of the following. **10**
   1) Write a short not on ‘DDL’, ‘DML’.
   2) Explain the relational data model with e.g.
   3) Explain 2NF, 3NF with e.g.

SLR-Z – 46

Seat No.	

B.Sc. (ECS) – III (Semester – V) (Old) Examination, 2016
COMPUTER SCIENCE (Paper – III)
Core Java

Day and Date : Saturday, 2-4-2016 Max. Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

N.B. *: 1)* ***All*** *questions are* ***compulsory****.*
2) Figures to ***right*** *indicate* ***full*** *marks.*

1. A) Choose the correct alternatives : **7**

1) Main () of Java a program is invoked by
   a) JVM b) O.S.
   c) Compiler d) Interpreter

2) A _____ serves as a template that provides a layout common to all its instances known as
   a) object, class b) class, object
   c) interface, methods d) interface, object

3) _____ can be used in any method to refer to the current object.
   a) Static b) This
   c) Super d) None of these

4) Static methods can not refer
   a) This b) Super
   c) Both (a) and (b) d) None of these

5) Which of the following is not related with object class
   a) clone() b) finalize()
   c) notify() d) compareTo()

6) The class which does not fully implements the interface must be declared as
   a) final b) abstract
   c) incomplete d) all of these

7) In Java synchronization is achieved by synchronizing
   a) method b) statement
   c) block d) all of these

P.T.O.

B) State **true** or **false** : **3**

1) Interface can be declared member of a class.
2) A catch block can not throw an exception caught by itself.
3) A HashMap class uses hash table to store map.

2. Solve **any five** : **10**

a) Java's platform independence.

b) Method overloading.

c) Synchronization.

d) Vector.

e) Package importance.

f) Throws clause.

3. A) Solve **any two** : **6**

1) Differentiate abstract class and interface.
2) Explain two uses of super keyword.
3) Describe access protection through package.

B) Write a program that will demonstrate use of finally. **4**

4. Solve **any two** : **10**

1) Write a program to create child threads by using Runnable interface.
2) Explain Java's parameter passing mechanism.
3) What is inner class ? How its behaviour with outer class ?

5. Solve **any two** : **10**

1) Write a program to create your own exception.
2) What is wrapper classes ? Explain any 3 wrapper classes.
3) Write a program to convert first character of each word into upper case from a file.

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SLR-Z – 47

Seat No.	

B.Sc. (ECS) (Part – III) (Semester – V) (Old) Examination, 2016
COMPUTER SCIENCE (Paper – IV)
Theory of Computer Science

Day and Date : Monday, 4-4-2016 Max. Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

***Instructions** : 1) **All** questions are **compulsory**.*
*2) Figures to **right** indicate **full** marks.*

1. Choose correct alternatives : **10**

1) _____ of string is any leading symbols of string.
   a) String b) Prefix
   c) Postfix d) Suffix

2) If L(r) = set of all strings containing at least two consecutive zeros over $\Sigma = \{0, 1\}$ then r = _____
   a) (0 + 1)*.00.(0+1)*
   b) 0(0+1)*.0.(0+1)*
   c) 1*.00.1*
   d) 1*01*0

3) A $\lambda \rightarrow \Delta$ is machine function of _____ machine.
   a) FA b) PDA
   c) Moore d) Mealy

4) The language over $\Sigma = \{0, 1\}$ containing even number of 0's then r = _____
   a) (1*01*01*)*
   b) (01*01*)
   c) (1001)
   d) (100010)

5) If r=ab* then grammar is $\{S \rightarrow aB, B \rightarrow bB|£\}$.
   a) True b) False

P.T.O.

6) The δ (A,a,b)=(B,£) is _____ operation in PDA.
   a) union b) intersection
   c) push d) pop

7) The FA is more powerful than PDA.
   a) True b) False

8) In GNF the grammar is required in the form of _____
   a) $A \rightarrow B$ b) $A \rightarrow a\alpha$
   c) $AB \rightarrow aB$ d) None of these

9) A _____ is set of ordered pairs.
   a) String b) Symbol c) Language d) Relation

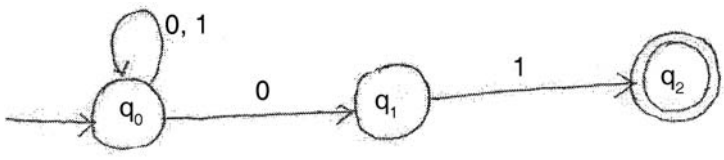
10) An empty set is denoted by _____
   a) Σ b) £ c) λ d) Φ

2. Solve **any five** : **10**

1) Design a DFA which find out given number is even or odd.
2) What is Turing machine ? Define Turing machine.
3) What is difference between leftmost and rightmost derivaiton.
4) Expalin type 3 grammar.
5) Give the rules for conversion of regualr expression to NFA with £-moves.
6) How many ways PDA accept language ? Give the ways.

3. A) Solve **any two** : **6**

1) Construct DFA equivalent to following NFA :



2) Explain procedure for eliminating £-moves from grammar with exmaple.
3) Construct a PDA equivalent to the following CFG.
   $S \rightarrow aABB \mid aAA$, $A \rightarrow aBB \mid a$, $B \rightarrow bBB \mid A$.

B) Construct F.A. equivalent to R.E. $(0+1)^*(01^*10)\ (0+1)^+$. **4**

4. Solve **any two** : **10**

   1) What is pumping lemma ? Using pumping lemma check $\{ww^R \mid w \in \{a,b\}^*\}$ is regualr or not.

   2) What is TM ? Design TM for language L = $\{a^n b^n a^n \mid n > 0\}$.

   3) Find a grammar in CNF equivalent to grammar
   $E \rightarrow E+T|T, T \rightarrow T*F|F, F \rightarrow (E)|a$.

5. Solve **any two** : **10**

   1) Check whether the following grammar is ambiguous or not; if ambiguity found remove the ambiguity and rewrite an equivalent grammar.
   $S \rightarrow aSb \mid aaSb \mid \in$.

   2) Write an algorithm to convert CFG into GNF with exmple.

   3) What is difference between DFA and NFA ? Design a DFA which accept binary number is divisible by 3.

SLR-Z – 48

Seat No.	

B.Sc. (ECS) – III (Semester – V) (Old) Examination, 2016
Paper – V : WEB TECHNOLOGY AND E-COMMERCE – I

Day and Date : Tuesday, 5-4-2016 Max. Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

***Instructions** : 1) **All** questions are **compulsory**.*
*2) Figures to the **right** indicate **full** marks.*

1. Choose the correct alternative : **10**

1) By default ASP.Net stores SessionID in ____
   a) Cache b) Database
   c) Cookies d) Global Variable

2) The _____ control provides to display different image on page each time it is loaded.
   a) Repeater b) Image c) ImageMap d) Adrotator

3) The _____ directive's duration attribute determines how long the page is cached.
   a) Page b) OutPutCache c) Cache d) Assembly

4) _____ validation control is used to validate a value entered into control falls within specified range.
   a) RegularExpression b) RequiredField
   c) Custom d) Range

5) Master page contains at least _____ number of ContentPlaceHolder controls.
   a) 1 b) 2 c) 3 d) Many

6) _____ property of button is used to set for cross page posting.
   a) PostBackUrl b) AutoPostBack
   c) Text d) CrossPagePost

7) By default event for TextBox control is
   a) TextChanged b) CheckedChanged
   c) Click d) Command

8) _____ is server side state management.
   a) QueryString b) ViewState c) Application d) HiddenField

9) The _____ provides set of types that are used by all .Net languages and ensures .Net language type compatibility.
   a) Common Type System b) Common Language Type
   c) Common Type Language d) Common System Type

10) We may add more than one Form tag in web page.
   a) True b) False

2. Answer the following **(any 5) :** **10**
   1) What is IIS ?
   2) Explain IsPostBack property.
   3) Explain Literal Control with example.
   4) What is HiddenField State ?
   5) Explain CheckBox Control.
   6) Trace property of page with example.

3. A) Answer the following **(any 2)** : **6**
   1) Explain CommandName property of Button with example.
   2) Explain Global.asax file.
   3) Explain Wizard Control with example.

   B) Explain difference between ASP and ASP.Net. **4**

4. Answer the following **(any 2)** : **10**
   1) Why ASP.Net page compilation is known as dynamic compilation ? Explain in detail.
   2) What are different events executed in master pages ? Explain in detail.
   3) What is use of Adrotator control ? Explain with example. (Use all properties of Ad tag)

5. Answer the following **(any 2)** : **10**
   1) What are cookies ? Explain how to create and delete cookies with example.
   2) Differentiate Client side and Server side validation. Explain custom validation control with example.
   3) Design web page which display ten TextBoxes using control array.

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SLR-Z – 49

Seat No.	

B.Sc. (ECS) – III (Semester – V) (Old) Examination, 2016
Paper – VI : VISUAL PROGRAMMING AND APPLICATION SOFTWARE – I

Day and Date : Wednesday, 6-4-2016 Max. Marks : 50

Time : 2.30 p.m. to 4.30 p.m.

Instructions *: 1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *indicate* ***full*** *marks.*

1. Choose correct alternatives : **10**

1) _____ property is used to retrieve the name of the currently running thread.
   a) Name b) ThreadState
   c) CurrentThread d) IsAlive

2) Abstract class cannot be sealed.
   a) True b) False

3) Value type data is stored in
   a) Queue b) Stack
   c) Heap d) List

4) If you don't want to override method by derived class then it will be declared as
   a) Abstract b) Virtual
   c) Sealed d) New

5) The _____ block is used to perform a clean-up process.
   a) Try b) Catch c) Throw d) Finally

6) Namespaces are the way that .Net avoids name clashes between classes.
   a) True b) False

7) Which of the following modifier is allowed to use in a struct ?
   a) Static b) Virtual
   c) Abstract d) All of these

P.T.O.

8) _____ keyword is used to assign aliases to classes.
   a) alias b) using c) include d) none of these

9) InfoDrive class provides properties and methods that provide information on a selected drive.
   a) True b) False

10) Defining two methods with the same name but with different parameters is called
   a) Overriding b) Virtual
   c) Abstract d) Overloading

2. Answer the following (**Any five**) : **10**
   1) Define method overriding.
   2) Give the importance of out parameters.
   3) Why uses structures ?
   4) What is the use of read-only fields ?
   5) What is the advantage of multithreading ?
   6) Give the different features of MSIL.

3. A) Answer **any two** of the following : **6**
      1) Explain read-only and write-only properties.
      2) List the different system-defined exceptions.
      3) Give the different features of Base Class Library.
   B) Write note on Command-line arguments. **4**

4. Answer **any two** of the following : **10**
   1) Explain custom exception with example.
   2) Explain indexers with suitable example.
   3) Define and implement an interface.

5. Answer **any two** of the following : **10**
   1) Explain the ArrayList and HashTable with suitable examples.
   2) Explain the .Net framework.
   3) Describe StreamReader and StreamWriter class.

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SLR-Z – 50

Seat No.	

B.Sc. (ECS) – III (Semester – VI) (Old) Examination, 2016
Paper – I : Data Communications and Networking – II

Day and Date : Tuesday, 22-3-2016 Total Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

***Instructions** : 1) **All** questions are **compulsory**.*
*2) Figures to the **right** indicate full marks.*

1. Choose the correct alternative. **10**

1) SMTP uses _____ Port number.
a) 79 b) 69 c) 25 d) 80

2) Following security service is not related to exchange of message using network.
a) message confidentiality b) message integrity
c) message authentication d) Entity authentication

3) _____ role provides remote access to machines through dial-up connections and virtual private networks.
a) Remote access server b) Terminal server
c) Streaming server d) Mail server

4) _____ file traditionally held user passwords in encrypted form in LINUX.
a) /etc/pass b) /etc/passwrd c) /etc/passwd d) /etc/password

5) IP security is maintained at the _____ layer.
a) Network b) Data Link c) Transport d) Physical

6) Default format for transferring text files by FTP is _____ file
a) Binary b) ASCII c) EBCDIC d) Image

7) Red hat linux uses _____ boot loader.
a) GRUB b) LVM c) MBR d) home

8) _____ is a asymmetric algorithm in cryptography.
a) IDEA b) DES c) RSA d) AES

P.T.O.

9) 129.165.0.1 Address is from following class.
   a) A b) B c) C d) D

10) _____ is used for group discussions in Windows server 2003.
   a) FTP b) UDP c) NNTP d) RTP

2. Answer the following (**any 5**). **10**
   1) What is three way handshaking mechanism ?
   2) What is WMI in Windows server ?
   3) Which are the recommended partitions in LINUX ?
   4) What is message nonrepudiation ?
   5) Which are the modes of operation in TELNET protocol ?
   6) What is meant by active hub and passive hub ?

3. A) Answer the following (**any 2**). **6**
      1) Explain the uses of UDP.
      2) Which are the various advantages of using user profiles of windows server 2003 ?
      3) Which are the various types of bridges ?

   B) Which are the various responsibilities of Network Administrator. **4**

4. Answer the following (**any 2**). **10**
   1) Explain POP3 protocol in detail.
   2) Why entity authentication is needed in network security ?
   3) Explain Bluetooth in detail.

5. Answer the following (**any 2**). **10**
   1) Explain the video compression technique.
   2) Explain Squid server of LINUX.
   3) Explain TCP segment with diagram.

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SLR-Z – 51

Seat No.	

B.Sc. (ECS) – III (Semester – VI) (Old) Examination, 2016
DATABASE MANAGEMENT SYSTEM – II (Paper – II)

Day and Date : Wednesday, 23-3-2016 Max. Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

1. Choose the correct alternatives : **10**

1) _____ refers to a property of computer to run several operations simultaneously and possible as computers await response of each other.
   a) Concurrency b) Deadlock c) Backup d) Recovery

2) _____ of the following makes the transaction permanent in the database.
   a) View b) Commit c) Rollback d) Flashback

3) _____ is a duplicate copy of a file program that is stored on a different storage media than the original location.
   a) Concurrency b) Deadlock c) Backup d) Recovery

4) The _____ attribute is used to declare variable base of definition of column.
   a) %ROWTYPE b) %TYPE c) TYPE d) int

5) In _____ phase all locks are requested.
   a) Growing Phase b) Shrinking Phase
   c) Aborted Phase d) None of these

6) Which of the following are recovery control techniques ?
   a) Deferred update b) Immediate update
   c) Both d) None

7) In order to maintain the consistency during transactions database provides _____ property.
   a) Commit b) Atomic c) Flashback d) Retain

8) Database security helps organizations to protect data from _____
   a) Internal users b) External users
   c) Non-external users d) Non internal users

P.T.O.

9) _____ refers to a stalemate situation due to which no further progress is possible as computer await response of each other.

a) Concurrency b) Deadlock c) Backup d) Recovery

10) A _____ consists of a sequence of query and/or update statements.

a) Transaction b) Commit c) Rollback d) Flashback

2. Attempt **any five** : **10**

1) What is Shared lock ?
2) List out advantages of PL/SQL.
3) Write syntax of while loop.
4) What is deadlock ?
5) Draw a PL/SQL block structure.
6) List out attributes of implicit cursor.

3. A) Attempt **any two** : **6**

1) Explain types of lock.
2) Explain concept of deadlock detection and recovery.
3) What is Exception ? List out pre-defined exception errors.

B) Write a trigger which will not allow negative salary of employee. **4**

4. Attempt **any two** : **10**

1) What is Transaction ? Explain ACID properties in detail.
2) Write a procedure to pass emp_no as an argument to modify salary of that employee.
3) Why recovery is needed ? Explain with failure classification.

5. Attempt **any two** : **10**

1) Explain serializability of schedule with example.
2) Write a PL/SQL block to accept string and print it in reverse order.
3) Explain variation of two phase locking.

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SLR-Z – 52

Seat No.	

B.Sc. (ECS) – III (Semester – VI) (Old) Examination, 2016
COMPUTER SCIENCE (Paper – III)
Advanced Java

Day and Date : Saturday, 26-3-2016 Max. Marks : 50

Time : 2.30 p.m. to 4.30 p.m.

***Instructions**: 1) **All** questions are **compulsory**.*

*2) Figures to the **right** indicate **full** marks.*

1. Choose correct alternative : **10**

1) Which of these packages contains all the classes and methods required for event handling in Java ?
   a) java.applet b) java.awt c) java.event d) java.awt.event

2) What will be returned by the method ejbCreate () CMP bean ?
   a) Null b) Primary key class
   c) Home object d) Remote object

3) Which method is used to specify before any lines that uses the PrintWriter ?
   a) setPageType() b) setContextType()
   c) setContentType() d) setResponseType()

4) JDBC is a Java API that is used to connect and execute query to the database
   a) True b) False
   c) Both a) and b) d) None of the above

5) A JSP page consists of which tags ?
   a) HTML tags b) JSP tags
   c) Both a) and b) d) None of the above

6) Which of these events will be notified if scroll bar is manipulated ?
   a) ActionEvent b) ComponentEvent
   c) AdjustmentEvent d) WindowEvent

7) Which statements about a session bean class are true ?
   a) It is a final class
   b) Overloaded constructors are supported
   c) Their business methods can be 'private'
   d) The ejbCreate() method must not be a final method

8) The life cycle of a servlet is managed by
   a) Servlet context
   b) Servlet container
   c) The supporting protocol (such as http or https)
   d) All of the above

9) Which interface provides methods to execute queries with the database ?
   a) Connection interface
   b) Statement interface
   c) ResultSet interface
   d) None of the above

10) In JSP which is an exception that is typically a user error or a problem that cannot be foreseen by the programmer ?
   a) Checked exceptions
   b) Runtime exceptions
   c) Errors
   d) None of the above

2. Answer **any five** of the following : **10**
   1) How does servlet differ from an applet ?
   2) Write list on types of beans.
   3) What is the difference between doGet() and doPost() ?
   4) What does Class.forName() method do ?
   5) Differentiate frame and window class.
   6) Explain cookies.

3. A) Answer **any two** of the following : **6**
      1) Explain response object in servlet.
      2) Explain JSP lifecycle.
      3) Explain Tabbed Panes.

   B) What are the differences between Swing and AWT ? **4**

4. Answer **any two** of the following : **10**
   1) Design a simple JSP page to display current date and time from system.
   2) Explain any two types of JDBC driver.
   3) What is session bean ? Explain with examples.

5. Answer **any two** of the following : **10**
   1) Explain the life cycle of servlet.
   2) Write a Swing program to add two numbers.
   3) Explain any three Event classes.

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SLR-Z – 53

Seat No.	

B.Sc. (ECS) – III (Semester – VI) (Old) Examination, 2016
COMPILER CONSTRUCTION (Paper – IV)

Day and Date : Monday, 28-3-2016 Max. Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

Instructions : *1)* ***All*** *questions are* ***compulsory****.*
2) ***All*** *questions carry* ***equal*** *marks.*

1. Choose correct alternatives : **10**

1) The compiler process can be considered as a series of sub process is called
   a) series b) sub process
   c) phases d) none of these

2) The _____ should be able to catch syntactic errors.
   a) lexical analyzer b) syntax analyzer
   c) both a) and b) d) none of these

3) The _____ is optional phase of compiler.
   a) lexical analyzer b) syntax analyzer
   c) code optimization d) code generation

4) The activation records are represented by
   a) three address code b) activation
   c) activation tree d) none of these

5) A computer uses a _____ to keep track of scope and binding information about names.
   a) phases b) symbol table
   c) heap allocation d) none of these

6) _____ is the activity of filling up unspecified information of labels using appropriate semantic actions in during the code generation process.
   a) dangling reference b) symbol table
   c) backtracking d) backpatching

P.T.O.

7) The _____ is used to eliminate common sub expression.

a) Syntax tree b) Annoted parse tree

c) DAG d) None of these

8) _____ is a grammar transformation that is useful for producing a grammar suitable for predicitive parsing.

a) Left recursive b) Left factoring

c) Both a) and b) d) None of these

9) Canonical parser is more powerful in LR parser

a) True b) False

10) The _____ is technique in compiler used to determine if storage location may be accessed more than one way.

a) Symbol table b) Alias analysis

c) Syntax analysis d) Semantic analysis

2. Solve **any five** : **10**

1) Define Short Circuit Code.

2) What are the different levels of syntax error handlers ?

3) What are difficulties with top down parsing ?

4) What are the actions available in shift reduce parser ?

5) What are the three kinds of intermediate representation ?

6) Construct DAG for Expression ? i : = i + 10.

3. A) Solve **any two** : **6**

1) Explain compiler construction tools in detail.

2) How to specify and recognize the tokens ?

3) What are issues in code generation ?

B) Find out triple, quadruple and indirect triple for following : **4**

a = b + c* d;

4. Solve **any two** questions from following : **10**

   1) Find first and follow of following grammar :

      $E \rightarrow E + T|T$, $T \rightarrow T*F|F$, $F \rightarrow (E)$ id

   2) What is compiler ? Explain phases of compiler in detail.

   3) Construct SLR (1) parsing table for following grammar :

      $S \rightarrow 0S0|1S1|10$

5. Solve following questions : **10**

   1) Check following grammar is LL(1) grammar or not ?

      $A \rightarrow AcB|cD|D$, $B \rightarrow bB|id$, $D \rightarrow DaB|BbB|B$

   2) Explain basic block and flow graph with example.

   3) Construct annotated parse tree for 3*5 + 4n using following grammar rules :

Production	**Semantic Rules**
1) $L \rightarrow En$	L.val = E. val
2) $E \rightarrow E_1 + T$	$E.val = E_1.val + T.val$
3) $E \rightarrow T$	E.val = T.val
4) $T \rightarrow T_1 * F$	$T.val = T_1.val \times F.val$
5) $T \rightarrow F$	T.val = F.val
6) $F \rightarrow (E)$	F.val = E.val
7) $F \rightarrow$ digit	F.val = digit .lexval

SLR-Z – 54

Seat No.	

B.Sc. (ECS) – III (Semester – VI) (Old) Examination, 2016
WEB TECHNOLOGY AND E-COMMERCE – II (Paper – V)

Day and Date : Tuesday, 29-3-2016 Max. Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

Instructions : *1) **All** questions are **compulsory**.*
*2) Figures to the **right** indicate **full** marks.*

1. Choose correct alternatives : **10**

1) _____ from the following is not phase of trade cycle.
   a) Execution b) Settlement c) Pre-Sale d) Mid-Sale

2) EDI is used to transfer Data from _____
   a) Person to person b) Person to computer
   c) Computer to person d) Computer to computer

3) E-Market is _____
   a) Electronic Market b) Electrical Market
   c) Embedded Market d) Element Market

4) I-Commerce is used for Once-Off transaction.
   a) True b) False

5) E-Visibility use _____ from the following for advertising.
   a) Web Portal b) Search engine
   c) Both a) and b) d) None of these

6) We can not handle exception in Asp.net.
   a) True b) False

7) _____ attribute of @page is used to display event hierarchy of a page.
   a) Trace b) Buffer c) Parse d) Inherits

8) Command object use _____ property from the following.
   a) Connection b) Cmd c) Open() d) Delete

9) Data Reader is read-only, forward-only cursor
   a) True b) False
10) Connection objects use _____ method to close connection.
   a) Close b) Close() c) Close[] d) Both b) and c)

2. Solve **any five** from following : **10**
   1) Explain User identity.
   2) Define Debugging. List type of Debugging.
   3) List features of Ado.Net.
   4) Write first mover advantages.
   5) List type of E-commerce.
   6) List benefits of EDI.
   7) Explain E-Newspaper.

3. A) Solve **any two** from following : **6**
      1) Explain different online payment mode.
      2) Explain data adapter with its properties and methods.
      3) What is exception ? List different HTTP status code.
   B) Write code to insert, update record of student from database using ADO.Net. **4**

4. Solve **any two** from following : **10**
   1) Define authentication. Explain types of authentication.
   2) Explain command object with its properties and methods. Write program to demonstrate use of command object.
   3) Explain elements of E-commerce.

5. Solve **any two** from following : **10**
   1) Explain I-Commerce with trade cycle. Give example of I-commerce.
   2) Define Tracing. Explain type of tracing.
   3) Explain authorization. Write code to demonstrate use of Allow and Deny.

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SLR-Z – 55

Seat No.	

B.Sc. (ECS) – III (Semester – VI) (Old) Examination, 2016
Paper – VI : VISUAL PROGRAMMING AND APPLICATION SOFTWARE – II

Day and Date : Wednesday, 30-3-2016 Max. Marks : 50

Time : 2.30 p.m. to 4.30 p.m.

Instructions *: 1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *place indicate* ***full*** *marks.*

1. Choose correct alternative : **10**

1) _____ control is derived from the List Control Class.
   a) Combo Box b) List Box
   c) Checked List Box d) All of these

2) Generally the return type of multicast delegate is
   a) Void b) Int c) String d) All of above

3) An assembly contains
   a) Assembly name b) Version number
   c) Strong name information d) All of these

4) An event is _____ type class member.
   a) Delegate b) Class c) Structure d) None of these

5) Radio buttons allow the user to choose only one of several options
   a) True b) False
   c) Both a) and b) d) None of these

6) In LINQ SkipWhile operator skip elements based on specified predict
   a) Sequence b) Function c) Pattern d) None of these

7) The extension of assembly is
   a) .cs b) .java c) .dll d) All of these

8) _____ attribute build the full name of assembly to provide an identity of assembly.
   a) Informational b) Assembly manifest
   c) Assembly identity d) Strong name

P.T.O.

9) _____ appears at the top of first page of the report.
   a) Page header b) Group header
   c) Report header d) None of these

10) _____ allow you to use a method that has derived return type as a delegate.
   a) Covariance b) Contra variance
   c) Both a) and b) d) None of these

2. Answer the following (**any five**) : **10**
   1) Give the list of mouse events.
   2) Write various section in crystal report.
   3) What is Multicast event ?
   4) What are the properties of Label control ?
   5) What is the generation operator in LINQ ?
   6) What is use of ToolTip control ?

3. A) Answer **any two** of the following : **6**
      1) Write a note on MDI application.
      2) Explain anonymous function.
      3) Explain select clause in LINQ.

   B) Explain Quantifier operator in LINQ.` **4**

4. Answer **any two** of the following : **10**
   1) Describe implementation of an event in c#.
   2) Create a windows application to check the number is palindrome or not. (Apply data validations)
   3) Explain ListBox and RichTextBox.

5. Answer **any two** of the following : **10**
   1) What is Assembly ? Explain its features.
   2) What is delegate ? Explain in detail.
   3) What is LINQ ? Explain the concept of LINQ to SQL.

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Seat No.	

B.Sc. (ECS) – III (Semester – VI) (New) Examination, 2016
Paper – I : DATA COMMUNICATIONS AND NETWORKING – II

Day and Date : Tuesday, 22-3-2016 Max. Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

Instructions : *1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *indicate* ***full*** *marks.*

1. Choose the correct alternative : **10**

1) Bluetooth uses
   a) frequency hopping spread spectrum
   b) orthogonal frequency division multiplexing
   c) time division multiplexing
   d) none of the mentioned

2) In PGP, to exchange e-mail messages, a user needs a ring of _____ keys.
   a) secret b) public
   c) either (a) or (b) d) both (a) and (b)

3) A wireless network uses _____ waves to transmit signals.
   a) Mechanical b) Radio c) Sound d) None

4) SMTP uses _____ port number.
   a) 79 b) 69 c) 25 d) 80

5) IP security is maintained at the _____ layer.
   a) Network b) Data Link c) Transport d) Physical

6) Default format for transferring text files by FTP is _____ file.
   a) Binary b) ASCII c) EBCDIC d) Image

7) Red hat linux uses _____ boot loader.
   a) GRUB b) LVM c) MBR d) Home

P.T.O.

8) _____ is a asymmetric algorithm in cryptography.
   a) IDEA b) DES c) RSA d) AES

9) 129.165.0.1 address is from following class.
   a) A b) B c) C d) D

10) _____ file traditionally held user passwords in encrypted form in LINUX.
   a) /etc/pass b) /etc/password c) /etc/passwd d) none of the above

2. Answer the following (**any 5**) : **10**

   1) What is three way handshaking mechanism ?
   2) What is Packet filter Firewall ?
   3) Which are the recommended partitions in LINUX ?
   4) What is message nonrepudiation ?
   5) Which are the modes of operation in TELNET protocol ?
   6) What is meant by active hub and passive hub ?

3. A) Answer the following (**any 2**) : **6**

      1) Explain the uses of UDP.
      2) Explain the four protocols used in SSL.
      3) Which are the various types of bridges ?

   B) Explain Bluetooth technology in detail. **4**

4. Answer the following (**any 2**) : **10**

   1) Explain RARP protocol in detail.
   2) Explain Remote Sensing in detail.
   3) Explain IPSec in detail.

5. Answer the following (**any 2**) : **10**

   1) Explain the video compression technique.
   2) Explain Squid server of LINUX.
   3) Explain PGP in detail.

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Seat No.	

B.Sc. (ECS) – III (Semester – VI) (New) Examination, 2016
COMPUTER SCIENCE (Paper – II)
Database Management System – II

Day and Date : Wednesday, 23-3-2016 Max. Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

Instructions *: 1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *indicated* ***full*** *marks.*

1. Choose the correct alternative. **10**

1) What are potential problems when a DBMS executes multiple transactions concurrently ?
   a) The lost update problem b) The dirty read problem
   c) The unrepeatable read problem d) All of above

2) _____ represents single line comment in PL/SQL.
   a) -- b) - c) /* and */ d) *

3) _____ is a unit of program execution that accesses and updates various data items.
   a) Transaction b) Scheduling
   c) Atomicity d) Consistency

4) SQL stands for _____
   a) Source Query Language b) Structured Query Language
   c) Sequence Query Language d) None of these

5) _____ command is used to display definition of a table.
   a) select b) desc c) revoke d) update

6) A trigger is _____
   a) A statement that starts DBMS
   b) A statement that executed automatically by the system at the time of modification the database
   c) Both a) and b)
   d) None

7) To find number of rows updated by a SQL state use _____
   a) SQL.ROWCOUNT b) RWOCOUNT
   c) SQL % ROWCOUNT d) % SQL.ROWCOUNT
8) Concatenation operator is SQL * plus _____
   a) && b) + c) – d) ||
9) desc command is used to display definition of a table.
   a) True b) False
10) Exceptions are designed to detect and handle _____ errors.
   a) run time b) compile time
   c) both a) and b) d) none

2. Answer **any five** of the following. **10**
   1) Define triggers.
   2) Define serializability.
   3) Define transaction.
   4) What are the names of attributes used in explicit cursor ?
   5) What are the types of triggers ?
   6) What is syntax package ?

3. A) Answer **any two** of the following : **6**
   1) Distinguish between procedure and function.
   2) What is scheduling ?
   3) Explain transaction states.

   B) What are the advantages of PL/SQL ? **4**

4. Answer **any two** of the following : **10**
   1) Explain view and conflict serializability.
   2) Write a PL/SQL block to display the reverse of the string.
   3) Create a procedure to display palindrome no from 1 to 100.

5. Answer **any two** of the following : **10**
   1) What is cursor ? What are the type of cursor and explain it in detail ?
   2) Write a PL/SQL block for the exception division by Zero.
   3) What is concurrency control ? Explain three problem of concurrency control.

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Seat No.	

B.Sc. (Entire Computer Science) – III (Semester – VI) (New) Examination, 2016

ADVANCED JAVA (Paper – III)

Day and Date : Saturday, 26-3-2016 Max. Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

Instructions : *1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *indicate* ***full*** *marks.*

1. Choose the correct alternatives : **10**

1) _____ method is called to destroy the servlet.
a) init() b) service() c) destroy() d) dead()

2) JComboBox uses _____ Event to select an item from it.
a) item b) window c) action d) none of these

3) The package javax.servlet is used for Generic servlet.
a) True b) False

4) Default port number of Apache Tomcat Server.
a) 1080 b) 8081 c) 8080 d) 8180

5) _____ method is used to set the size of window.
a) setSize() b) setWidth() c) setwindow() d) All the above

6) In JSP, out is the object of _____ class.
a) System b) PrintWriter c) both a) and b) d) None of the above

7) _____ is the deployment descriptor file in servlet.
a) Web.xml b) servlet.xml c) Web.html d) servlet.html

8) Cookies stored at _____ side.
a) Client b) Server c) both a) and b) d) None of the above

9) JDBC-ODBC Bridge driver in Java is the combination of JDBC and ODBC component.
a) True b) False

10) EJB is a _____ software component that encapsulates the business logic of an application.
a) Client-Side b) Server-Side
c) Both Client and Server d) None of these

P.T.O.

2. Attempt **any five** : **10**
   1) What is Adapter Classes ? Name any two adapter classes used in event handling.
   2) What is Servlet Session ? Which class is used for handling session ?
   3) What is JTabbedPane ? List out its constructors.
   4) What is Driver Manager ? Give its methods.
   5) What is Event ? List out different event classes.
   6) What is EJB ? What are the types of EJB ?

3. A) Attempt **any two** : **6**
      1) Explain the servlet Life cycle.
      2) What is ResultSet ? Explain its methods.
      3) What is Exception ? How to handle exception in JSP ?

   B) Write a program to implement Action Listener interface. **4**

4. Attempt **any two** : **10**
   1) Write a program in JDBC to insert book details (Book Name, Author, Publisher, Price) in Book table using prepared Statement.
   2) Explain MVC Architecture in detail.
   3) Explain different implicit objects in JSP.

5. Attempt **any two** : **10**
   1) Explain JDBC Driver Types in detail.
   2) Write a program in JSP to display current date and time.
   3) Write a program in servlet to add cookies for a TextBox.

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Seat No.	

B.Sc. (ECS) – III (Semester – VI) (New) Examination, 2016
COMPILER CONSTRUCTION (Paper – IV)

Day and Date : Monday, 28-3-2016 Max. Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

***Instructions**: 1) **All** questions are **compulsory**.*
*2) **All** questions carry **equal** marks.*

1. Choose correct alternative : **10**

1) A _____ compiler is also called as residential compiler.
a) self b) cross c) both a and b d) none of these

2) The errors comes due to undefined variable, incompatible operands to operator is called _____ errors.
a) lexical b) syntactic c) semantic d) logical

3) A computer uses a _____ to keep track of scope and binding information about names.
a) phases b) symbol table
c) heap allocation d) none of these

4) _____ is the activity of filling up unspecified information of labels using appropriate semantic actions in during the code generation process.
a) Dangling reference b) Symbol table
c) Backtracking d) Backpatching

5) If optimization is over small program segments then it is called as _____ optimization.
a) local b) global c) simple d) none of these

6) In _____ the parser discards enough number of tokens to reach a descent state on the declaration of errors.
a) Panic mode recovery b) Parser level recovery
c) Both a and b d) None of these

7) The interdependencies among the inherited and synthesized attributes at the nodes in a parse tree can be depicted by a directed graph is called a
   a) Color graph b) dependency graph
   c) graph d) acyclic graph

8) Three address codes are implemented using
   a) Indirect triples b) Triples
   c) Quadruples d) All of the above

9) The attributes that can be computed from the values of the attributes at the siblings and parent of that node is called as
   a) synthesized b) inherited c) both a and b d) none of these

10) In some programming languages, an identifier is permitted to be a letter followed by any number of letters or digits. If L and D denote the sets of letters and digits respectively, which of the following expressions define an identifier ?
   a) $(L \cup D)^*$ b) $L (L \cup D)^*$
   c) $(L. D)^*$ d) none of the above

2. Solve **any five**. **10**

1) Write a triple implementation for x [i] = y.

2) Define :
   a) Basic blocks b) Flow graphs.

3) Give the names of dynamic storage allocation techniques.

4) If it is possible to convert source code into target codes then why we have need of three address code.

5) What are the three kinds of intermediate representation ?

6) Construct DAG for expression a + a* (b – c) + (b – c)* d.

3. A) Solve **any two.** **6**

1) What is Backtracking ? Explain with example.

2) Consider the grammar.
   $E \rightarrow E + E$, $E \rightarrow E^*E$, $E \rightarrow id$.
   Perform Shift Reduce Parsing of the input string “id–id*id”.

3) Find first and follow of the following grammar :
   $E \rightarrow E+T|T$, $T \rightarrow T^*F|F$, $F \rightarrow (E) \mid id$.

B) What is the difference between CLR and LALR ? **4**

4. Solve **any two** questions from following : **10**

1) Construct SLR(1) parsing table for following grammar :

$S \rightarrow 0S0|1S1|10$

2) Why code optimization is used ? Explain code optimization in detail.

3) Why three address code is used ? Explain implementation type of three address statements.

5. Solve the following questions **(any two)** : **10**

1) Construct RDP for $S \rightarrow abAc|abDb$, $A \rightarrow aA|a$, $D \rightarrow dD|d$.

2) Explain storage allocation strategies in detail.

3) Construct annotated parse tree for 3*5+4n using following grammar rules :

Production	**Semantic Rules**
1) $L \rightarrow E\ n$	L. val = E. val
2) $E \rightarrow E_1 + T$	E. val = E_1. val + T. val
3) $E \rightarrow T$	E. val = T. val
4) $T \rightarrow T_1 * F$	T. val = T_1. val × F.val
5) $T \rightarrow F$	T. val = F. val
6) $F \rightarrow (E)$	F. val = E. val
7) $F \rightarrow$ digit	F. val = digit. lexval

SLR-Z – 60

Seat No.	

B.Sc. (Entire Computer Science) – III (Semester – VI) (New) Examination, 2016
WEB TECHNOLOGY AND E-COMMERCE – II (Paper – V)

Day and Date : Tuesday, 29-3-2016 Max. Marks : 50
Time : 2.30 p.m. to 4.30 p.m.

***Instructions** : 1) **All** questions are **compulsory**.*
*2) Figures to the **right** indicate **full** marks.*

1. Choose correct alternative : **10**

1) _____ from the below are the mode of delivering the goods.
   a) Post b) Packet
   c) Local delivery d) All of the above

2) EDI is used by Organizations for transaction that occur on a _____ basis.
   a) Irregular b) Regular
   c) Random d) None of these

3) olx.com is an example of _____
   a) E-NewsPaper b) Internet Banking
   c) Virtual Auction d) Online share dealing

4) App_Themes folder contains _____ files.
   a) .Skin b) .css c) Image d) All of these

5) DataReader object is a _____ object.
   a) Forward-only b) Backward-only
   c) Both a) and b) d) None of these

6) Windows-Based Authentication is well suited for _____
   a) Desktop Application b) Intranet Application
   c) Mobile Application d) Internet Application

7) To Write code for Application – start event, _____ file is used.
   a) Web.config b) Default.aspx
   c) Global.asax d) All of the above

8) ContentPlaceHolder control is required on a content page.
   a) True b) False

9) _____ is a new channel for news distribution through Internet.
   a) E-NewsPaper b) Radio
   c) Post d) Virtual Auction

10) _____ is the basic element of Internet e-commerce.
   a) Ease Of Use b) Online Payment
   c) Visibility d) All of the above

2. Attempt **any five** : **10**
   1) Define master page and content page.
   2) Explain Sqlparameter class with syntax.
   3) Explain usage of E-Market.
   4) Define authorization. Write code for authorization.
   5) Explain any four methods of Command object (Any Provider).
   6) Explain Hidden field example.

3. A) Attempt **any two** : **6**
   1) Explain E-Newspaper with supply chain.
   2) Define Exception. Write code to handle exception at Application Level.
   3) Explain CreateUserWizard control in detail.

   B) Write asp.net code to insert, update Student information from “stud” table. **4**

4. Attempt **any two** : **10**
   1) Explain EDI. How is it beneficial ?
   2) Define Tracing. Explain types of Tracing.
   3) Explain Nested Master page. Write a code to nest a master page.

5. Attempt **any two** : **10**
   1) Explain server-side. State management techniques in detail.
   2) Explain Internet E-commerce security in detail.
   3) Explain theme. Write a code to use theme in asp.net.

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SLR-Z – 61

Seat No.	

B.Sc. (ECS) – III (Semester – VI) (New) Examination, 2016
VISUAL PROGRAMMING AND APPLICATION SOFTWARE – II (Paper – VI)

Day and Date : Wednesday, 30-3-2016 Max. Marks : 50

Time : 2.30 p.m. to 4.30 p.m.

Instructions *: 1)* ***All*** *questions are* ***compulsory****.*
2) Figures to the ***right*** *place indicate* ***full*** *marks.*

1. Choose the correct alternative : **10**

1) The _____ clause determines what type of result are obtained by query.
   a) From b) Select c) Group d) Sort

2) _____ delegate is the ability to create an invocation list.
   a) Single cast b) Multicast c) Public d) Private

3) The different namespaces can have in a single assembly.
   a) True b) False

4) Lambda expression used in
   a) LINQ b) Delegates c) Events d) All of these

5) _____ is a control that contains other controls.
   a) ListView b) CheckedListBox
   c) Panel d) ProgressBar

6) An event is a delegate type class member that is used by the object.
   a) True b) False

7) The value type of MultiLine property is _____ of TextBox control.
   a) Integer b) String c) Boolean d) None of these

8) Which of the following feature provided by an assemblies ?
   a) Easy deployment b) Self describing
   c) Application domain d) All of these

9) Which of the following is not derived from ButtonBase class ?
   a) Button b) LinkButton c) CheckBox d) RadioButton

10) Which of the following statement is correct about a delegate ?
   a) A delegate can invoke only one method
   b) A delegate cannot invoke more than one method
   c) Delegates can be used to implement callback notification
   d) Delegates is a user defined value type

2. Answer the following **(any five)** : **10**

1) What is an assemblies ?
2) What is the importance of a ListBox control ?
3) What is the difference between Label and LinkLabel control ?
4) List the different sections of crystal reports.
5) Give the general syntax of LINQ query.
6) Define delegate.

3. A) Answer **any two** of the following : **6**

1) Give the importance of an assemblies.
2) How to present data from crystal reports on to form ?
3) Differentiate SDI and MDI.

B) Write a note on Group by LINQ operator. **4**

4. Answer **any two** of the following : **10**

1) What is event ? Explain with suitable example.
2) Write a program to implement multicast delegate.
3) Describe the different components of an assemblies.

5. Answer **any two** of the following : **10**

1) Create a windows application for handle the user defined and predefined events.
2) What is LINQ ? Explain different benefits of LINQ.
3) Explain the term :
   a) Button b) DateTimePicker c) PictureBox
