



Seat No.	
-------------	--

**B.Sc. I (Semester – I) (Entrepreneurship) Examination, 2017
ENGLISH (Compulsory) (CBCS Pattern) (New)
'On Track' English Skills for Success**

Time : 2.30 Hours

Total Marks : 70

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

1. Complete the following statements by choosing the correct alternatives from those given below them.

14

- 1) Jimmy and Bob dined at _____ restaurant twenty years ago.
 - a) Big Brother's
 - b) Big Boss Brandy's
 - c) Big Joe' Brady's
 - d) John Bradly's
- 2) The story, 'After Twenty Years' implies that 'silky' Bob is _____.
 - a) Private Detector
 - b) Restaurant Owner
 - c) Police Officer
 - d) Gangster or Criminal
- 3) The writer met Miss. Krishna _____.
 - a) at an art exhibition
 - b) at the hotel
 - c) in railway
 - d) in city bus
- 4) The narrator of the story 'The Connoisseur' is _____.
 - a) Nergis Dalal
 - b) Sarojini Naidu
 - c) O. Henry
 - d) Attila Narin
- 5) The essential part of intelligence, as the Latin word suggests, is _____.
 - a) the inability to neglect the simple facts
 - b) the ability to look beyond the simple the facts
 - c) the inability to look at nature
 - d) the ability to compete others
- 6) Mr. Binet developed _____.
 - a) IQ Test
 - b) GK Test
 - c) Aptitude Test
 - d) Computer software



3. A) Write short answers on **any two** of the following : **8**
- 1) Describe the different types of bangles which the bangle sellers carry.
 - 2) What is the theme of 'An Irish Airman Foresees His Death' ?
 - 3) The speaker in 'An Irish Airman Foresees His Death'.

- B) Write a paragraph on **any two** of the following : **6**
- 1) Human values are Timeless and Eternal.
 - 2) Solar Energy.
 - 3) A Decision that Changed my life.

4. Write an essay on the impact of mobile on the lives of young people in the present day. **14**

OR

Write an essay describing an exciting cricket match which you have seen.

5. Read the following passage and make notes of it. Use an appropriate title for your notes. **14**

Drugs related health disorders are many and varied. Dirty needles and solutions used for injecting drugs can easily cause abscesses in the arms and veins, liver disease, venereal diseases and infection of the kidneys and brain. Sniffing cocaine and amphetamines can damage the tissue of the nose and Marijuana and tobacco smoking can cause lung diseases. Heavy users of alcohol, volatile solvents, amphetamines or Marijuana may find that their livers are permanently damaged. Babies of women addicted to opiates are likely to be born addicted and to suffer from withdrawal symptoms. Cocaine and amphetamines can cause hair loss. Recent research has indicated that Marijuana can damage cells. A drug user's way of life makes him more susceptible to pneumonia, tuberculosis, malnutrition and weight loss. Finally, an overdose of any of the sensual drugs can lead to respiratory or cardiac failure and death.



Seat No.	
---------------------	--

**B.Sc. – I (Semester – I) (New CBCS) Examination, 2017
ENTREPRENEURSHIP (Paper – I)
Entrepreneurship and the World of Business**

Time : 2 ½ Hours

Max. Marks : 70

1. Multiple choice questions :

14

- 1) HUF
 - A) Hindu undivided family
 - B) Hindusthan uni-liver factory
 - C) Hindusthan undivided family
 - D) None of these
- 2) Which of the following shows the process of creating something new ?
 - A) Business model B) Modeling C) Innovation D) All the above
- 3) Which one of the following gives suggestions for new product and also help to market new products ?
 - A) Existing products and services B) Distribution channels
 - C) Federal Government D) Consumers
- 4) A person who managed large project was termed as the entrepreneur in the
 - A) Earliest period B) Middle ages
 - C) 17th century D) 19th and 20th century
- 5) Having more than 50 percent of share in company is called
 - A) private limited B) joint sector C) partnership D) public limited
- 6) The level at which an individual is viewed by society is called
 - A) Financial status B) Qualification
 - C) Social status D) Achievement
- 7) Which one of the following is an important source of idea generation due to their familiarity with the needs of market ?
 - A) Existing products and services B) Distribution channels
 - C) Federal government D) Consumers



- 8) SBA stands for
A) Small Business Accountants
B) Small Business Administration
C) Small Business Adequacy
D) Small Business Advisors
- 9) Which of the following factor has allowed small companies to act like they are big ones ?
A) Technology
B) Customers
C) Economic development
D) Competition
- 10) Entrepreneur is characterized by great caution and skepticism in practicing any change
A) Innovating
B) Fabian
C) Imitative
D) None of these
- 11) _____ is the primary barriers for women entrepreneurs.
A) lack of family support
B) lack of social support
C) lack of technical skill
D) lack of market knowledge
- 12) _____ and insurance are basic aids to trade and commerce.
A) manufacturing
B) banking
C) service
D) trading
- 13) The term entrepreneurship was first used in
A) French
B) Greek
C) American
D) Latin
- 14) Entrepreneurs are high in
A) need achievement
B) leadership
C) quality
D) motivation
2. Solve **any seven** of the following :
- 1) Transactional company.
 - 2) Write on joint sector.
 - 3) What are the barriers to entrepreneurship ?
 - 4) Choice of business line.
 - 5) Introduce innovativeness of product.
 - 6) Nature of business ethics.
 - 7) HUF.
 - 8) Introduction of entrepreneur motivation.
 - 9) Scope of business ethics.



3. A) Write note on **any two** of the following : **10**
- 1) Write note on multinational company.
 - 2) Characteristics of entrepreneurship.
 - 3) What are the scope of business ?
- B) Comment on scope of entrepreneurship in India. **4**
4. Attempt **any two** of the following : **14**
- 1) Explain in detail entrepreneurship as process.
 - 2) Private limited company and public limited company. Discuss.
 - 3) Characteristics or features of business.
5. Attempt **any two** of the following : **14**
- 1) Difference between entrepreneur v/s manager.
 - 2) Write on type of entrepreneur.
 - 3) Influence of background factor on behavioural orientation. Discuss.
-



Seat No.	
----------	--

**B.Sc. – I (Semester – I) (New CBCS) Examination, 2017
Economics for Manager and Managerial Accounting
ENTREPRENEURSHIP (Paper – II)**

Time : 2¹/₂ Hours

Max. Marks : 70

N.B. : 1) **All questions are compulsory.**
2) **Draw the diagram if necessary.**

1. Choose the correct answer from given alternative : 14

- 1) Financial statement is a part of _____
a) Book keeping b) Debit c) Accounting d) None of these
- 2) Machinery account shows _____ balance.
a) Debit b) Credit c) Positive d) Negative
- 3) Debtors account shows _____ balance.
a) Debit b) Credit c) Nominal d) Real
- 4) When supply of a commodity remains constant and does not change whatever may be the change in price it is said to be _____
a) Perfect elastic b) Perfect inelastic
c) Relatively elastic d) Relatively inelastic
- 5) Suppose there is only one factory in a small town providing employment for labour in the area. And there is a trade union which controls the supply of labour in the factory. What kind of market situation it is ?
a) Oligopoly b) Monopoly
c) Bilateral monopoly d) All the above
- 6) Profit is measured by _____
a) Revenue – fixed costs b) Fixed cost + revenue
c) Revenue – sales d) Revenue – total cost
- 7) Production cost is concerned with _____ to produce a given quantity of output.
a) Demand forecast b) Estimation of cost
c) Profit management d) Pricing policies



- 8) Trial balance is a list of _____ account.
a) Personal b) Real c) Nominal d) Ledger
- 9) Goodwill account appears on _____ side of trail balance.
a) Debit b) Credit c) Both sides d) None of these
- 10) Open-stock is entered in a trading account on the _____ side.
a) Credit b) Debit c) Asset d) Liability
- 11) Managerial economics aims at providing help in the firms is _____
a) Decision making b) Supply
c) Production d) Demand
- 12) The appropriate objective of firm is _____
a) Maximization of sales b) Maximization of profit
c) Maximization of employment d) All the above
- 13) Money value of business reputations called _____
a) Premises b) Liability c) Goodwill d) Bank balance
- 14) Capital is _____ of the business.
a) Assets b) Liability c) Property d) Goodwill

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

14

- 1) The law of demand.
- 2) What is mean market structure ?
- 3) Characteristics of perfect competition.
- 4) What is account ?
- 5) Why is P and L account prepared ?
- 6) What is capital ?
- 7) What is production ?
- 8) Criteria of good forecasting methods.
- 9) Preparation of final account.



3. A) Write note on **any two** from the following : **10**
- 1) Nature of managerial economics.
 - 2) Demand analysis and its objectives.
 - 3) Journalize following transaction in the Books of Mrs. Ankita :

Sr. No.	Date	Particulars	Amt.
1.	1 July 2011	Started business with cash	2,25,000
2.	3 July 2011	Deposited in to Dena Bank	1,50,000
3.	8 July 2011	Brought goods on credit from Manisha	10,000 @ 10% TD
4.	10 July 2011	Paid house rent	2,500
5.	11 July 2011	Wages paid	6,000

- B) Scope of managerial economics. **4**

4. Write in brief answer from the following (**any two**) : **14**
- 1) What is managerial economics and classified of internal economics and eternal economics ?
 - 2) Demand analysis and its objective. Discuss.
 - 3) What are the different types of market ?

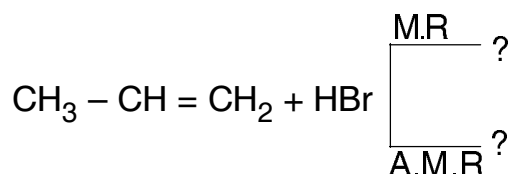
5. Write in brief from the following (**any two**) : **14**
- 1) Journalize following transaction in the Books of Mr. Vipul :

Sr. No.	Date	Particulars	Amt.
1.	1 March 2012	Started business with cash	10 lacks
2.	2 March 2012	Amount deposited into Bank	6,00,000
3.	5 March 2012	Brought goods from Anil	2,00,000
4.	8 March 2012	Purchase machinery and furniture	20,000
5.	12 March 2012	Paid for postage	1,500
6.	13 March 2012	Paid to Anil from bank A/c in full settlement	1,95,000

- 2) What are the functions of business finance ?
 - 3) Explain in detail types of demand analysis.
-



vi) Complete the reaction



vii) Define aromatic and pseudoaromatic compounds.

viii) Define empirical and molecular formula.

ix) Define hypnotics drug with suitable example.

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

i) Kolbe's synthesis for preparation of alkanes.

ii) Friedel-Craft alkylation reaction.

iii) Qualities of good dyes.

B) Write the qualities of good drug. **4**

4. i) What are alkane ? Explain the mechanism of free radical of halogenation of alkanes. **14**

ii) How will you detect nitrogen by Kjeldahl's method ?

iii) What are dienes ? Explain in brief the classification of dienes.

5. Answer **any two** of the following : **14**

i) What is meant by dehydrohalogenation ? Explain E¹ & E² mechanism for dehydrohalogenation of lower alkyl halide.

ii) Explain the combustion method for detection of carbon and hydrogen. 1.8 × 10⁻⁴ kg of an organic compound when subjected to combustion method produced 2.64 × 10⁻⁴ kg of CO₂. Calculate percentage of carbon in organic compound.

iii) Explain in brief sulphonation of benzene with mechanism.



Seat No.	
----------	--

**B.Sc. – I (Entrepreneurship) (Sem. – I) (New CBCS) Examination, 2017
INDUSTRIAL MICROBIOLOGY – I
Fundamentals of Microbiology**

Time : 2¹/₂ Hours

Max. Marks : 70

- N. B. :** i) **All questions are compulsory and carry equal marks.**
ii) **Draw a neat labelled diagram wherever necessary.**
iii) **Figure to right indicates full marks.**

1. Rewrite the following sentences by choosing correct alternatives from given below : **14**

- i) The organism which use organic compound as a carbon and energy source belongs to
a) Photoautotroph
b) Chemoheterotroph
c) Chemoautotroph
d) Photoheterotroph
- ii) _____ is the example of ionizing radiation.
a) gamma-rays
b) β-rays
c) UV-ray
d) IR
- iii) Peptidoglycan is the main component of _____ bacterial cell wall.
a) Gram positive
b) Gram negative
c) Fungi
d) Algae
- iv) _____ types of ribosomes present in prokaryotic cell.
a) 80s
b) 90s
c) 100s
d) 70s
- v) Invasion of cell membrane is known as
a) Ribosomes
b) Pili
c) Mesosomes
d) Flagella
- vi) _____ is a group of related isolates or strains.
a) Species
b) Family
c) Order
d) Class



- vi) Define photoautotroph with example.
 - vii) Define Industrial Microbiology.
 - viii) Antony Van Leeuwenhoek.
 - ix) Mesosomes.
3. A) Answer **any two** of the following : **10**
- i) Explain in detail applied branches of Microbiology.
 - ii) Write in detail basic nutritional requirement of microorganism.
 - iii) Describe in detail chemical agents of sterilization.
- B) Write in detail difference between prokaryotic cell and eukaryotic cell. **4**
4. Answer **any two** of the following : **14**
- i) Explain in detail general principles of nomenclature.
 - ii) Describe in detail physical agents of sterilization.
 - iii) Write in detail structure and chemical composition of Flagella.
5. Answer **any two** of the following : **14**
- i) Explain in detail Diauxic growth.
 - ii) Describe in detail nutritional classification based on carbon and energy source.
 - iii) Write in detail structure and chemical composition of cell wall.
-



Seat No.	
----------	--

B.Sc. – I (Semester – I) (Entrepreneurship) (New CBCS) Examination, 2017
INDUSTRIAL MICROBIOLOGY – I
Basic Techniques in Microbiology

Time : 2 ½ Hours

Max. Marks : 70

- N.B. :** 1) **All questions are compulsory and carry equal marks.**
2) **Draw a neat labelled diagram wherever necessary.**
3) **Figure to the right indicates full marks.**

1. Rewrite the following sentences by choosing correct alternatives from given below.

14

- i) Source of electron in electron microscope consist
A) Gold B) Tungsten C) Mercury D) Silver
- ii) MacConckey's agar is _____ media.
A) Differential B) Selective C) Both A and B D) Living
- iii) Ability of lens to distinguish two adjacent point is known as
A) Resolution B) Numerical aperture
C) Working distance D) Objective lens
- iv) _____ is enriched media.
A) Nutrient broth B) Nutrient agar
C) Blood agar D) None of these
- v) Estimating the number of microorganism in given sample is called as
A) Cultivation B) Inoculation C) Enumeration D) Inhibition
- vi) _____ is fixed below the condensor to control amount of light entering into condensor.
A) Mirror B) Iris diaphragm
C) Stage D) Pillar



- vii) _____ used as mordant in Gram staining.
A) Alcohol B) Tannic acid C) Picric acid D) Iodine
- viii) Viable cell count for growth measurement carried out by
A) DMC B) MBRT C) TDT D) TVC
- ix) Embryonated chicken egg is _____ media.
A) synthetic B) crude C) living D) semisynthetic
- x) Population of more than one type of species of microorganism is called as _____ culture.
A) Mixed B) Dual C) Pure D) Axenic
- xi) Nigrosine is a _____ stain.
A) Neutral B) Basic C) Acidic D) Di-azo
- xii) _____ is a differential staining.
A) Positive B) Gram C) Negative D) Capsule
- xiii) _____ invented streak plate technique.
A) Robert Koch B) Robert Hook C) Louis Pasteur D) Lister
- xiv) _____ is solidifying agent of media.
A) Agar-Agar B) Glucose C) Lactose D) NaCl

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

14

- i) DMC.
- ii) Define selective media.
- iii) Bile salt used in media and its role.
- iv) Basic stain.
- v) Serial dilution.
- vi) Define pure culture.
- vii) Enlist methods of total cell count.
- viii) Enriched media.
- ix) Types of objective lens.



3. A) Answer **any two** of the following : **10**
- i) Explain in detail Monochrome staining.
 - ii) Explain in brief principle and application of dark field microscopy.
 - iii) Define culture media. Give in detail role of media ingredients.
- B) Discuss in detail differential, enrichment and natural media. **4**
4. Answer **any two** of the following : **14**
- i) Define living media. Describe in detail tissue culture as living media.
 - ii) Explain in detail standard plate count.
 - iii) Describe in detail principle and working of SEM.
5. Answer **any two** of the following : **14**
- i) Describe in detail Gram staining.
 - ii) Define Axenic culture. Discuss in brief streak and pour plate technique.
 - iii) Describe in detail direct methods of growth measurements.
-



- 8) _____ are the structures present in plastids of plant cells.
a) Ribosomes b) Lysosomes c) Thylakoids d) F1 particles
- 9) _____ cells undergo meiosis.
a) Reproductive b) Somatic
c) Unicellular organisms d) Bacterial
- 10) _____ are the building blocks (monomers) of DNA – genetic material of living organisms.
a) Deoxyribonucleotides b) Ribonucleotides
c) Amino acids d) Proteins
- 11) Meiosis results in
a) 2 haploid daughter cells b) 4 haploid daughter cells
c) 2 diploid daughter cells d) 4 diploid daughter cells
- 12) _____ suggested the widely accepted fluid mosaic model of biological membranes.
a) Robertson b) Singer and Nicolson
c) Danielli and Davson d) Gorter and Grendel
- 13) _____ type of ribosomes are present in prokaryotic cells.
a) 70S b) 80S c) 90S d) 50S
- 14) _____ is an example of prokaryotic organism.
a) *Escherichia Coli* b) Amoeba
c) *Gelidium spp.* d) *Mangifera Indica*

2. Attempt **any seven** of the following :

14

- 1) State any two principles of cell theory.
- 2) Draw a labelled diagram of ultra structure of mitochondria.
- 3) What is phagocytosis ? Give an example of phagocytic cell.
- 4) Write any two definite characteristics of plant cell.
- 5) What is cell senescence ?
- 6) Define mitosis and enlist the stages.
- 7) Write any two differences between prokaryotic and eukaryotic organisms.
- 8) Write any two functions of cell wall.
- 9) Define chromosome.



3. A) Attempt **any two** of the following : **10**
- 1) Give a detailed account on chemical nature and structure of genetic material.
 - 2) Explain the Fluid Mosaic Model of Plasma Membrane.
 - 3) Write the definite characteristics of animal cell.
- B) Differentiate between gram positive and gram negative bacterial cell wall. **4**
4. Attempt **any two** of the following : **14**
- 1) What is a cell and add a note on biochemical composition of cell.
 - 2) Give an account on structure, functions and types of chromosomes.
 - 3) Give a detailed account on chloroplast.
5. Attempt **any two** of the following : **14**
- 1) Give an account on structure and functions of plant cell wall.
 - 2) Write an account on mitosis.
 - 3) Give a summary of membrane functions.
-



Seat No.	
-------------	--

B.Sc. Part – I (Semester – I) (CBCS) (New) Examination, 2017
ENTREPRENEURSHIP
Industrial Biotechnology (Paper – II)
Animal & Plant Physiology

Time : 2½ Hours

Max. Marks : 70

- Instructions :** 1) **All questions are compulsory.**
2) **Figures to the right indicate full marks.**
3) **Draw neat labeled diagrams wherever necessary.**

1. Rewrite the sentence using correct alternative given below. **14**
- i) Medium between blood and cells is made by _____
A) bone marrow B) lymph C) WBCs D) muscles
 - ii) Squamous epithelium is also called as _____ epithelium.
A) Bridge B) Pavement C) Connective D) Cuboidal
 - iii) Pepsin is secreted by _____ cells.
A) Zymogen B) Mucous C) Oxyntic D) Goblet
 - iv) Kupffer cells are characteristics of _____
A) stomach B) intestine C) liver D) pancreas
 - v) Alpha cells of pancreas secrete _____
A) insulin B) glucagon C) bile D) pancreatic juice
 - vi) The _____ pigments contain open pyrrole ring.
A) Phycobillins B) Xanthophyll C) Chlorophyll D) Beta carotene
 - vii) During light phase of photosynthesis _____ is oxidized and _____ is reduced.
A) CO₂ and water B) water and CO₂
C) water and NADP D) CO₂ and NADP
 - viii) The source of CO₂ during calvin cycle in C₄ pathway is _____
A) Malic acid B) OAA C) PEP D) RuDP
 - ix) The oxygen molecule in glucose formed during photosynthesis comes from _____
A) water B) organic acids
C) CO₂ D) atmosphere
 - x) _____ is known as the father of tissue culture.
A) Bonner B) Haberlandt C) Laibach D) Robert Koch
 - xi) Callus is _____
A) embryo forming tissue
B) an insoluble carbohydrate
C) an unorganized actively dividing mass
D) a soluble carbohydrate



- xii) Bile synthesis and secretion is carried out in _____
A) oesophagous B) stomach C) heart D) liver
- xiii) _____ are a pair of organs located in the back of abdomen and regulate excretion.
A) kidneys B) lungs C) testis D) ovaries
- xiv) _____ is the fleshy, muscular organ in the mouth of mammals, used for tasting.
A) teeth B) saliva C) tongue D) vocal cord

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

14

- i) What is role of oesophagous ?
- ii) Draw labeled diagram of epithelial tissue.
- iii) State names of accessory pigments.
- iv) Draw labeled diagram of V.S. of skin.
- v) What are functions of ovary ?
- vi) What is tissue culture ?
- vii) Write overall reaction of photosynthesis.
- viii) What is origin and location of nervous tissue ?
- ix) What are media components for plant tissue culture medium ?

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

10

- i) Explain in detail the C3 pathway.
- ii) Write in detail structure and function of stomach.
- iii) Describe in detail basic elements for growth.

B) Write a note on 'photosystems'.

4

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

14

- i) Describe in detail animal tissue culture.
- ii) Write in detail about V.S. of tooth.
- iii) Write an account on physiology of testis.

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

14

- i) Write an account on photosynthesis.
 - ii) Describe in detail origin, location and structure of kidney.
 - iii) Add a detailed account on plant tissue culture.
-



Seat No.	
---------------------	--

**B.Sc. – I (Semester – II) (Entrepreneurship) (CBCS) (New) Examination, 2017
ENGLISH (Comp.)
On Track : English Skills for Success**

Time : 2½ Hours

Max. Marks : 70

1. Complete the following sentences by choosing the correct alternatives from those given below them :

14

- 1) The V-2 missile became the first missile to exceed the
 - a) speed of motor
 - b) speed of sound
 - c) speed of computer
 - d) none
- 2) _____ is the denominator among all successful men and women.
 - a) Partial interest
 - b) Total discipline
 - c) Total commitment
 - d) Partial commitment
- 3) The Parliament of Religions was to be held in
 - a) America
 - b) Canada
 - c) Singapore
 - d) India
- 4) Who represented the Jains at the Parliament of Religions ?
 - a) Swami Vivekananda
 - b) Annie Besant
 - c) Gandhi
 - d) Pratap Chunder Mozoomdar
- 5) According to Nani A. Palkhivala human rights may be summed up in one word
 - a) survival
 - b) fraternity
 - c) freedom
 - d) none
- 6) The main reason for serious economic problems of the majority is
 - a) famine
 - b) negligence
 - c) drought
 - d) ignorance
- 7) Nani A. Palkhivala's ultimate aim was to establish _____ as a social mandate.
 - a) Dharma
 - b) Constitution
 - c) Secularism
 - d) None



- 8) Ralph Emerson's 'Brahma' speaks about the relationship between
- the soul and surrounding world
 - the body and surrounding world
 - the soul and body
 - the poet and soul
- 9) Robert Hayden _____ mankind's relationship with the moon.
- ponders on
 - rejects
 - prays
 - none
- 10) Ralph Emerson is an advocate of
- transcendentalism
 - all religions
 - west philosophy
 - none
- 11) That is the _____ important thing of all for Kisan.
- list
 - least
 - lest
 - little
- 12) The _____ congratulated the best student of the college.
- principle
 - principal
 - prencipal
 - principles
- 13) Mr. Kokane cannot drink _____ coffee without your company.
- her
 - his
 - their
 - your
- 14) The correct antonym of 'expensive' is
- cheap
 - chief
 - poor
 - best

2. Answer in brief **any seven** of the following :

14

- 1) What happened to the first V-2 missile when it was first tested ?
- 2) What is 'flow' according to Dr. A. P. J. Abdul Kalam ?
- 3) Describe Vivekananda's meeting with J. H. Wright.
- 4) What kind of personality was Wernher von Braun according to Dr. Kalam ?
- 5) How was Vivekananda's speech at the Parliament of Religions different from those of the other speakers ?
- 6) Why does Palkhivala say that the world continues to be 'less than half free' ?
- 7) Enumerate the signs of hope for a better world that Palkhivala sees.
- 8) How did Vivekananda begin his speech in Parliament of religion ?



3. A) Write short answers on **any two** of the following : **8**
- 1) What is the message of the poem 'Brahma' by Emerson ?
 - 2) How does Hayden Lament the Moon's Fate ?
 - 3) What is Emerson's concept of 'Brahma' ?
- B) Write short answers on **any two** of the following : **6**
- 1) As the Principal of college, write a notice informing students about Annual Social Gathering. Mention day, date and events.
 - 2) What is an agenda ?
 - 3) What do you mean by minutes ?
4. Answer **any one** of the following questions : **14**
- A) You are Dr. Tanaji Bhand, Secretary of Prabodhan Academy. The well known speaker has been called to deliver lecture on M.P.S.C. examinations. Write a notice and agenda informing members of the academy. Imagine necessary details.
- OR
- B) You have received an email letter of appointment for the post of Assistant Manager at Spark Consulting Company, Pune. Write an email letter accepting the offer.
5. Prepare the curriculum vitae of a science graduate who has applied for the post Sales Executive. **14**
-



- 7) An accounting approach in which expected benefits exceed expected costs is classified as _____
- A) benefit approach B) cost approach
C) cost-benefit approach D) accounting approach
- 8) Flow of goods and services from start of gathering materials until delivery of products is classified as
- A) flow chart analysis B) supply chain analysis
C) resource chain analysis D) acquiring analysis
- 9) Decisions regarding kind and used material and changes in plant processing are included in _____
- A) past management B) future management
C) help management D) cost management
- 10) Process of analyzing and reviewing financial records to check integrity of company financial reports is called _____
- A) internal audit B) external audit
C) functional audit D) treasury audit
- 11) Current assets are also referred to as _____
- A) Working capital B) Investment
C) Inventory D) Livestock
- 12) When the concept of ratio is defined in respected to the items shown in the financial statements, it is termed as _____
- A) Accounting ratio B) Financial ratio
C) Costing ratio D) None of the above
- 13) A technique uses in comparative analysis of financial statement is _____
- A) graphical analysis B) preference analysis
C) common size analysis D) returning analysis
- 14) Markets in which market offerings are bought from sellers for reselling purpose are known as _____
- A) business markets B) reseller markets
C) government markets D) international markets



2. Answer the following questions (**any 7**) : **14**
- 1) Define Gross Profit Ratio.
 - 2) Meaning market segmentation.
 - 3) Define management accounting.
 - 4) Define working capital.
 - 5) Concept of money measurement.
 - 6) Definition of market environment.
 - 7) Formula of inventory turnover ratio.
 - 8) Importance of marketing research.
3. A) Write short note **any 2** : **10**
- 1) Selling Vs Marketing.
 - 2) Working capital theory.
 - 3) Benefits of marketing segmentation.
- B) Definition of market and types of marketing. **4**
4. Attempt **any two** of the following : **14**
- 1) Write down nature and scope of management accounting.
 - 2) Write down advantages and limitation of marketing research.
 - 3) Explain the Theory of Working Capital.
5. Attempt **any two** of the following : **14**
- 1) Explain need and importance of environment analysis.
 - 2) Explain benefits of market segmentation.
 - 3) Write short notes :
 - a) Debtors turnover ratio.
 - b) Creditors turnover ratio.
-



Seat No.	
----------	--

B.Sc. – I (Entrepreneurship) (Semester – II) Examination, 2017
ENTREPRENEURSHIP SCIENCE (Paper – II)
(New – CBCS Pattern)
Cost Accounting and Project Management

Time : 2.30 Hours

Max. Marks : 70

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

1. Choose the correct alternative from the given alternatives : **14**
- 1) Which of the following does not constitute the role of a project manager ?
 - a) Integrator and coordinator
 - b) Business case approval
 - c) Project delivery
 - d) Project planning and controlling
 - 2) Effective communication is one of the most important skills required by
 - a) The project team
 - b) The management
 - c) The project manager
 - d) The project contractor
 - 3) The interpretation of quality can vary from person to person due to differences in
 - a) Culture
 - b) Nationality
 - c) Economic background
 - d) All of the above
 - 4) Salary to staff include in
 - a) Administrative cost
 - b) Factory cost
 - c) Service cost
 - d) None of these
 - 5) The company has to repair or replace a product. This will be taken as a
 - a) Recall cost
 - b) Warranty cost
 - c) Scrap and rework cost
 - d) Inspection and testing cost
 - 6) To check whether we are developing the right product according to the customer requirements are not it process
 - a) Validation
 - b) Verification
 - c) Quality Assurance
 - d) Quality control
 - 7) Using the marginal costing method contribution is equal to total sales revenue less
 - a) Direct labour costs
 - b) Total costs
 - c) Variable costs
 - d) Fixed costs



- 8) The actual input price is \$ 150 and the budgeted input price is \$ 80 then the price variance is
a) \$ 30 b) \$ 70 c) \$ 150 d) \$ 80
- 9) The functional manager and project manager have equal power in which organizational structure
a) Weak matrix b) Functional
c) Strong matrix d) Balanced matrix
- 10) LSI denote for
a) Large Scale Industry b) Low Standard Industry
c) Both a and b d) None of these
- 11) What is defined as “the ability to influence and align others towards a common purpose” ?
a) Teamwork b) Motivation
c) Management d) Leadership
- 12) Material is
a) Direct expenses b) Indirect expenses
c) Both a and b d) None of these
- 13) A project is typically defined in terms of scope, time, cost and which other parameter ?
a) Benefits b) Quality c) Tolerance d) Controls
- 14) Who owns the Project Management Plan (PMP) ?
a) The project team b) The chief executive
c) The project manager d) The project support office

2. Answer the following questions (**any 7**) :

14

- 1) Scope of small scale industries.
- 2) Explain the nature of costing.
- 3) Explain direct and indirect expenses with example.
- 4) Limitation of job cost sheet.
- 5) Define financial accounting and cost accounting.
- 6) Note on project report.
- 7) Types of overheads.
- 8) Concept of economic and social variables.
- 9) Example of small business.



3. A) Write short notes on (**any 2**) : **10**
- 1) Advantage of job cost sheet
 - 2) Types of cost
 - 3) Relationship between small and large unit.
- B) Difference between cost accounting and financial accounting. **4**

4. Attempt **any two** of the following : **14**
- 1) Define project management. Explain in types of project management.
 - 2) Classification of elements of cost as material.
 - 3) Significance and content of project report.

5. Attempt **any two** of the following : **14**
- 1) Process of project development.
 - 2) Prepare a statement showing the cost of production and goods sold for the period 01-01-2009 to 31-01-2009.

Particulars	Rs.
Opening Stock	40,00,000
Raw materials purchased	5,00,00,000
Wages paid	2,50,00,000
Factory overheads	80,00,000
W.I.P. (01-01-2009)	10,00,000
W.I.P. (31-01-2009)	20,00,000
Closing stock of raw material on (31-01-2009)	30,00,000
Closing stock of finished Goods on (01-01-2009)	80,00,000
Closing stock of finished Goods on (31-01-2009)	70,00,000
Selling and Distribution overheads	10,00,000
Administrative overheads	25,00,000
Sales	10,00,00,000

Prepare : Cost of material consumed. Prime cost. Factory cost, Cost of goods sold, Total cost

- 3) Classification of costing methods.
-



Seat No.	
-------------	--

B.Sc. – I Entrepreneurship (Semester – II) Examination, 2017
INDUSTRIAL CHEMISTRY (Paper – I)
Fundamentals of Physical Chemistry (New CBCS-Pattern)

Time : 2.30 Hours

Total Marks : 70

- N.B :** i) **All questions are compulsory.**
ii) Draw **neat** labeled diagrams and write equations **wherever** necessary.
iii) Figures to the **right** indicate **full** marks.

1. Select the most **correct** alternative from among those given below and rewrite the sentence. 14

- i) The reaction, $A+B \rightarrow \text{products}$, is _____
a) Unimolecular
b) Bimolecular
c) Trimolecular
d) Tetra molecular
- ii) Rate of reaction _____
a) Increases with increase in temperature
b) Decreases with increase in temperature
c) Is independent of temperature
d) Is independent of concentration
- iii) The order of chemical reaction may be _____
a) Zero
b) Integer
c) Half Integer
d) All of these
- iv) The molecular weight of a compound is an example of _____ property.
a) Additive
b) Constitutive
c) Additive and constitutive
d) None of these
- v) The reciprocal of viscosity is called as _____
a) Surface tension
b) Frictional resistance
c) Fluidity
d) None of these

P.T.O.



2. Answer **any seven** of the following : **14**
- i) Define i) Mole fraction ii) Normality
 - ii) Give one example of first order reaction.
 - iii) Define molecularity of reaction give its example.
 - iv) Define additive and constitutive property with example.
 - v) Define ideal gas and non ideal gas.
 - vi) Give two assumptions of kinetic theory of gases.
 - vii) Name the different methods for determination of concentration.
 - viii) Write the Van der Waals equation.
 - ix) What do you mean by pseudo-molecular reaction ?
3. A) Attempt **any two** of the following : **10**
- i) Discuss the liquefaction of gas.
 - ii) Explain the surface tension with suitable diagram.
 - iii) Half life time of first order reaction is 25 minutes. How much time will be required to complete 99.9% reaction ?
- B) Discuss the factors affecting the rate of reaction. **4**
4. Attempt **any two** of the following : **14**
- i) Define first order reaction. Derive an expression for it.
 - ii) Give the experimental determination of co-efficient of Viscosity by Ostwald's Viscometer.
 - iii) Explain with the help of Boyle's law the deviation of gases from ideal behavior.
5. Attempt **any two** of the following : **14**
- i) Explain the method to determine surface tension by drop weight method.
 - ii) Explain Andrew's isotherm for carbon dioxide gas.
 - iii) Give the characteristics of second order reaction.
-



- 8) A gas expands isothermally and reversibly. The work done is _____
a) $-W$ b) W c) Zero d) W_{\max}
- 9) The molecular mass of _____ polymer is the sum of molecular weight of constituent monomer.
a) Addition b) Condensation c) Artificial d) Synthetic
- 10) Refining of petroleum yields _____ fractions.
a) One b) Two c) Five d) Three
- 11) Cracking is the process used in _____
a) Refining of petroleum
b) Hydroforming
c) Convert less volatile alkane to more volatile alkane
d) All of these
- 12) Natural gas consists of highest % of _____
a) Methane b) Ethane
c) Cyclopropane d) Ethene
- 13) The percentage of fat in buffalo milk is _____
a) 3 b) 1 c) 6.6 d) 10.5
- 14) The efficiency of heat engine operating between 400 K to 300 K is _____
a) 0.75 b) 0.25 c) 0.50 d) 1.0

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

14

- i) What is meant by octane number ?
- ii) Define :
 - a) Monomer b) Elastomer.
- iii) Define enthalpy.
- iv) State Joule – Thomson effect.
- v) Define soft water.
- vi) Give importance of cis-platin.
- vii) What is meant by BOD ?
- viii) Explain Flash point.
- ix) Define addition and condensation polymer.



3. A) Write short notes on **any two** : **10**
- i) Cracking of fuel.
 - ii) Second law of thermodynamics.
 - iii) Chemical composition of milk.
- B) Distinguish between spontaneous and non-spontaneous process. **4**
4. Answer **any two** of the following : **14**
- i) What are polymers ? Discuss various types of polymers with suitable example.
 - ii) Derive relation for efficiency of Carnot cycle.
 - iii) Give an account on constituents and refining of petroleum.
5. Answer **any two** of the following : **14**
- i) Explain essential nutrients of plants and explain their function.
 - ii) Write the synthesis and application of following polymer :
 - a) Polyethene
 - b) Polyvinyl chloride.
 - iii) What are the types of fuel ? Discuss the term fire point.
-



3. A) Answer **any two** of the following : **10**
- i) Explain in detail fermenter design.
 - ii) Discuss in detail sterilization of fermentation media.
 - iii) Describe in detail raw material used in fermentation media.
- B) Briefly explain scope of industrial microbiology. **4**
4. Answer **any two** of the following : **14**
- i) Explain in brief different types of fermenters.
 - ii) Write in detail about the isolation and preservation of industrially important microorganisms.
 - iii) Describe primary screening with suitable example.
5. Attempt **any two** of the following : **14**
- i) Explain in detail factors affecting fermentation process.
 - ii) Write in detail secondary screening techniques and add a note on its significance.
 - iii) Take a detail account of fermentation media.
-



Seat No.	
----------	--

**B.Sc. – I (Entrepreneurship) (Semester – II) (New CBCS)
Examination, 2017
INDUSTRIAL MICROBIOLOGY – II
Basic Techniques in Industrial Microbiology**

Time : 2.30 Hours

Total Marks : 70

- N.B** 1) *All questions are **compulsory** and carry **equal** marks.*
2) *Draw a **neat** labeled diagrams **wherever** necessary.*
3) *Figure to the **right** indicates **full** marks.*

1. Rewrite the following sentences by choosing **correct** alternatives from given below :

14

- i) _____ salt is mainly used for recovery and fractionation of proteins.
a) Isocitrate b) Malate c) Ammonium d) Citrate
- ii) The separation of component from a liquid mixture by treatment with a solvent in which the desired component is soluble is known as _____ extraction.
a) Liquid-liquid b) Solid-solid
c) Liquid-solid d) None of these
- iii) _____ is mainly used in computer applications in fermentation technology for ADC to DAC.
a) Knob b) Clock c) Meter d) Interface
- iv) _____ is the process of mutation in strain improvement of microorganism.
a) Genomics b) Fermentation economics
c) Mutagenesis d) DSP
- v) _____ studies refer to the act of using results obtained from laboratory studies for designing a prototype and a pilot plant process.
a) Scale up b) Scale down
c) Precipitation d) Data management

P.T.O.



- vi) _____ is prepared by removing of cell wall using lytic enzymes in an osmotic solution.
a) Mutant b) Auxotroph c) Protoplast d) Prototroph
- vii) _____ % cost is requiring for recovery and purification of ethanol.
a) 30 b) 40 c) 55 d) 70
- viii) The process adopted to produce an inoculums meeting these criteria is called as _____
a) Hydrolytic enzyme b) Inoculums development
c) Scale up d) Antibiotic
- ix) _____ is an industrial important procedure for qualitatively assessing or quantitatively measuring the amount of fermentation product.
a) Assay b) Scale up c) Fermentation d) None of these
- x) Dextran can be precipitated out of broth by the addition of _____
a) Methanol b) HCL
c) NaOH d) KOH
- xi) _____ processing refers to the recovery and purification of biosynthetic products.
a) Production b) Upstream c) Downstream d) None of these
- xii) Antibacterial compound assayed qualitatively as well as quantitatively by _____ assay.
a) Diffusion b) End point determination
c) Metabolic response d) Mutagens
- xiii) _____ mutants are those which cannot grow on minimal media.
a) Auxotrophic b) Autotrophic
c) Prototropic d) All a, b and c
- xiv) _____ is the example of Batch filtration process.
a) HEPA b) Plate and frame
c) Rotary vacuum drum d) Chance



2. Answer **any seven** of the following : **14**
- i) Define Crystallization.
 - ii) Define metabolic response assay.
 - iii) Enlist types of downstream processing.
 - iv) Define Site directed mutagenesis.
 - v) Define biological assay.
 - vi) What is Centrifugation ?
 - vii) What is Precipitation ?
 - viii) Enlist mutagenic agent.
 - ix) Define Turbidometric assay.
3. A) Answer **any two** of the following : **10**
- i) Describe in brief Mutagenesis.
 - ii) Discuss in detail Fermentation economics.
 - iii) Describe in detail metabolic response assay.
- B) Give a detailed account on development of inoculums. **4**
4. Answer **any two** of the following : **14**
- i) Describe in detail gene manipulation for strain improvement.
 - ii) Define Filtration and explain in detail types filtration.
 - iii) Explain in detail enzymatic assay.
5. Answer **any two** of the following : **14**
- i) Write in detail computer applications in fermentation technology.
 - ii) Discuss in detail Scale up of fermentation.
 - iii) Describe in detail Solvent extraction process for recovery of product.
-



Seat No.	
----------	--

B.Sc. – I (Semester – II) (New-CBCS) Examination, 2017
INDUSTRIAL BIOTECHNOLOGY
Entrepreneurship
Paper – I : Basics Biomolecules

Time : 2.30 Hours

Max. Marks : 70

- N.B :** 1) *All questions are **compulsory** and carry **equal** marks.*
2) *Draw a neat labelled diagram **wherever** necessary.*
3) *Figures to the **right** indicate **full** marks.*

1. Rewrite the following sentences by choosing correct alternatives from given below.

14

- i) _____ is reducing sugar.
A) Glucose B) Ribulose C) Ribose D) Glyceraldehyde
- ii) Lactose is disaccharide consist of _____ glycosidic linkages.
A) α 1-4 B) β 1-4 C) ω 1-4 D) α 1-6
- iii) Amino acids are joined by _____ bond.
A) Hydrogen B) Ionic C) Peptide D) Glycosidic
- iv) Fibrous protein such as silk fibroin consist of _____ secondary structure.
A) α helix B) β sheets C) Twists D) Turns
- v) _____ is sulphur containing amino acid.
A) Glycine B) Alanine C) Cysteine D) Arginine
- vi) The hydrolysis of fats by alkalies into fatty acid and glycerol is called as _____
A) Saponification B) Colloidal C) Coagulation D) Saccharification

P.T.O.



- vii) The sterols which acts precursors of vitamin D₂ is called as _____
A) Cholcalciferol B) Cholesterol C) Ergosterol D) Lanosterol
- viii) Cholesterol is
A) Glycolipid B) Phospholipid
C) Steroids D) Fatty acid
- ix) The enzymes which are secreted in the presence of substrate is known as _____ enzyme.
A) Endoenzyme B) Exoenzyme
C) Constitutive D) Inducible
- x) Epimerases and racemases are belongs to _____ class of enzymes.
A) Oxidoreductases B) Isomerases
C) Transferases D) Hydrolases
- xi) Two or more form of enzymes which carry out similar reaction is know as
A) Apoenzyme B) Coenzyme
C) Isoenzyme D) Ribozyme
- xii) _____ is a water soluble vitamin.
A) Vitamin A B) Vitamin B C) Vitamin E D) Vitamin K
- xiii) The beriberi caused due to the deficiency of _____ Vitamin.
A) Vitamin A B) Vitamin B C) Vitamin E D) Vitamin K
- xiv) The regulation of blood glucose level is carried out by _____ hormone
A) Insulin B) Melatonin C) Somatotropin D) Glucagon

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

14

- i) Define Coenzyme
- ii) Define cerebrosides.
- iii) What is α helix ?
- iv) Define oligosaccharide.
- v) Enlist pituitary hormones ?
- vi) Define glycosaminoglycans.
- vii) Enlist acidic amino acids.



3. A) Answer **any two** of the following. **10**
- i) Describe in brief Factors affecting on enzyme activity.
 - ii) Define Vitamin. Discuss in detail fat soluble vitamins.
 - iii) Describe in detail structure and function of lipoprotein.
- B) Give a detailed account on types of enzymes. **4**
4. Answer **any two** of the following. **14**
- i) Describe in detail methods of enzyme Immobilization.
 - ii) Discuss in detail structural classification of proteins.
 - iii) Define Fatty acid. Discuss in brief simple and derived lipids.
5. Answer **any two** of the following. **14**
- i) Define polysaccharide. Discuss in detail Homopolysaccharide.
 - ii) Discuss in detail Ramchandran plot.
 - iii) Describe in detail animal hormones.
-



- vii) _____ transport is a movement of biochemical's and other atomic or molecular substances across cell membranes without need of energy input.
a) Active b) Normal c) Reduce d) Passive
- viii) Pentose phosphate pathway is also known as _____
a) EMP b) HMP c) TCA d) MCA
- ix) _____ is the process of phosphate group transfer into ADP to synthesize energy rich ATP molecule making use of light as external energy source.
a) Osmosis b) Transformation
c) Phosphorylation d) Glycolysis
- x) _____ is the synthesis of complex molecules in living organisms from simpler ones together with the storage of energy.
a) Anabolism b) Catabolism
c) Metabolism d) Amphibolism
- xi) Number of ATP synthesized in Glycolysis is _____
a) 10 b) 12 c) 08 d) 14
- xii) _____ is an organism requiring organic compounds for its principal source of food.
a) Auxotroph b) Heterotrophs
c) Autotrophs d) Both b) and c)
- xiii) _____ is a chemical compound (such as a drug, pesticide or carcinogen) that is foreign to a living organism.
a) Vitamin C b) Xenobiotics
c) Probiotics d) Prebiotics
- xiv) TCA cycle is also known as _____
a) Kreb's cycle b) Glycolysis
c) Glyoxylate d) EMP

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

- i) Define Chemotrophs.
- ii) Define Biotransformation.
- iii) Define Metabolism.
- iv) LD₅₀.
- v) Define Heterotrophs.



- vi) Enlist enzyme involved in glycolysis.
 - vii) ATP.
 - viii) Define Xenobiotics.
3. A) Answer **any two** of the following : **10**
- i) Describe in brief model organisms used in environmental monitoring.
 - ii) Explain in detail Biotransformation of Xenobiotics.
 - iii) Describe in detail glyoxylate cycle.
- B) Give a detailed account on mitochondrial structure. **4**
4. Answer **any two** of the following : **14**
- i) Describe in detail TCA cycle.
 - ii) Define Glycolysis. Discuss in detail EMP Pathway.
 - iii) Discuss in brief Passive transport.
5. Answer **any two** of the following : **14**
- i) Explain in brief Toxicity.
 - ii) Discuss in brief transmembrane channels.
 - iii) Describe in detail photophosphorylation.
-



SLR-CY – 27

Seat No.	
-------------	--

B.Sc. – I (Semester – II) Entrepreneurship (CGPA) (Old)
Examination, 2017
INDUSTRIAL MICROBIOLOGY (Paper – II)
Fundamental of Microbiology and Basic Techniques in Microbiology

Time : 2¹/₂ Hours

Max. Marks : 70

- N.B. :** 1) *Figures to the right indicates full marks.*
2) **Each** Section includes **four** questions.
3) **All** the questions in **each** Section are **compulsory**.
4) **Draw** a neat, well labelled diagram **wherever** necessary.

SECTION – I

(Fund. of Ind. Microbiology)

35

1. Rewrite the sentence by choosing correct alternative :

5

- 1) Foam is produced by _____
a) Inoculum addition b) Steam
c) Agitation and aeration d) Boiling
- 2) _____ material is more suitable for construction of fermentor.
a) Stainless steel b) Glass c) Wooden d) Plastic
- 3) _____ technique is used for primary screening of antibiotic producers.
a) Giant colony b) Crowded plate
c) Indicator plate d) Streak plate
- 4) Major component of molasses is _____
a) Protein b) Lipid c) Sugar d) Vitamin
- 5) _____ are used in the medium for maintaining pH changes in fermentation process.
a) Buffers b) Acids
c) Bases d) Antifoam agents

P.T.O.



2. Answer **any five** of the following : **10**
- 1) What is chemical assay ?
 - 2) Explain methods of crystallization.
 - 3) What is transformation ?
 - 4) Write the importance of enzymatic assay.
 - 5) What is Genetic Engineering ?
 - 6) Write about 'Gene manipulation.'
 - 7) Write about 'Photoreactivation.'
3. A) Write short notes on **any two** of the following : **10**
- 1) Write on different types of chemical mutagen and explain any one with suitable example.
 - 2) Explain solvent extraction.
 - 3) Give a account on 'Microbial Assay.'
- B) Answer **any one** of the following : **10**
- 1) Give a detail account on 'Down Stream Process.'
 - 2) Write in detail about 'Scale up of fermentation and computer control of fermentation process.'
-



Seat No.	
----------	--

**B.Sc. – I (Semester – II) (Entrepreneurship) (CGPA) (Old)
Examination, 2017
INDUSTRIAL BIOTECHNOLOGY (Paper – II)
Basic Biomolecules and Basics of Metabolism**

Time : 2.30 Hours

Total Marks : 35+35=70

- N.B. :** 1) **Both** the Sections are **compulsory** and carry **equal** marks.
2) Both Sections should be attempted in **same** answer book.
3) Figures to the **right** indicates **full** marks.
4) Draw a **neat** labelled diagram **wherever** necessary.

**SECTION – I
(Basic Biomolecules)**

1. Rewrite the following sentences by choosing correct alternative : **5**
- i) Rickets disease caused by deficiency of _____ Vitamin.
A) Vit. A B) Vit. B C) Vit. C D) Vit. D
 - ii) _____ is acidic amino acid.
A) Lysine B) Aspartic acid
C) Arginine D) Glycine
 - iii) _____ is example of oligosacchride.
A) Sucrose B) Starch C) Glucose D) Albumin
 - iv) _____ Hormone secreted by β cells of islets of langerhans.
A) TSH B) Thyroxin C) Melanin D) Insuline
 - v) Phospholipid backbones derived from
A) Sphingolipid B) Ceramide C) Trisacchride D) Triacylglycerol
2. Answer **any five** of the following : **10**
- i) Enlist basic amino acids.
 - ii) Define enzymes.



- iii) Define carbohydrate.
- iv) Define acid number of Fatty acid.
- v) Enlist fat soluble Vitamins.
- vi) Define hormones.
- vii) Define cofactor.

3. A) Answer **any two** of the following : **10**
- i) Explain in detail structural level of classification of proteins.
 - ii) What is biocatalyst ? Describe in detail mechanism of enzyme action.
 - iii) Discuss in brief glycolipid and glycoprotein with examples.
- B) Answer **any one** of the following : **10**
- i) Describe in detail methods of enzyme immobilization.
 - ii) Define oligosacchride. Explain it with examples.

SECTION – II
(Basics of Metabolism)

1. Rewrite the following sentences by choosing correct alternatives. **5**
- i) Total gain of ATP molecules in Emp pathway is
A) 03 B) 08 C) 20 D) 32
 - ii) $\text{Na}^+ - \text{K}^+ / \text{ATPase}$ pump is example of _____ transport.
A) Active B) Passive C) Facilitated D) Group translocation
 - iii) Photosynthesis in Eukaryotes occurs in
A) Mitochondria B) Chloroplast C) Cytoplasm D) lysozyme
 - iv) Nutritionally deficient or mutant organism is called as
A) Auxotroph B) Autotroph C) Chemotroph D) Prototroph
 - v) The process which involves conversion of one form of substance to another form with organism or enzyme called
A) Cleavage B) Catalysis C) Transfer D) Biotransformation



2. Answer **any five** of the following : **10**
- i) Define phototroph.
 - ii) Define simple diffusion.
 - iii) Define biotransformation.
 - iv) Define oxidation and reduction.
 - v) Define metabolism.
 - vi) Draw neat labelled diagram of chloroplast.
 - vii) What is ion gated channel ?
3. A) Answer **any two** of the following : **10**
- i) Describe in detail Emp pathway.
 - ii) Define photosynthesis. Describe in detail eight independent phase of photosynthesis.
 - iii) What is high energy compound ? Describe in detail ATP is high energy compound.
- B) Answer **any one** of the following : **10**
- i) Explain in detail fluid mosaic model of cell membrane.
 - ii) Write a detailed account on oxidative phosphorylation.
-



Seat No.	
-------------	--

B.Sc. – II (Semester – III) (CGPA) Examination, 2017
ENTREPRENEURSHIP (Paper – III)
Principles of Business Management and Business Organization

Time : 2½ Hours

Max. Marks : 70

Instructions: 1) **All questions are compulsory.**
2) **Draw the diagram if necessary.**

1. Choose the correct alternatives from the following : 14
- 1) _____ is the function of employing suitable personnel for the enterprise.
A) Co-ordinating B) Planning C) Directing D) Staffing
 - 2) _____ is the father of “Management Process”.
A) Henry Fayol B) Peter Druker
C) Charles Babej D) F. W. Taylor
 - 3) The _____ activity is related to see that all activities events proceed as planned.
A) Co-ordinating B) Directing C) Control D) Plan
 - 4) Herzberg’s _____ factor theory.
A) Two B) X C) One D) Z
 - 5) _____ means a process of stimulating people to action to accomplish desired goals.
A) Leader B) Motivation C) Manager D) None of these
 - 6) Planning is the first function of management and _____ is the last one.
A) Controlling B) Directing
C) Co-ordinating D) All the above
 - 7) _____ is one of the type of control.
A) Management B) Concurrent control
C) Manager D) None of these



3. A) Solve **any two** from the following : **10**
- 1) Explain in detail Henry Fayol.
 - 2) What are the features of planning ?
 - 3) Nature of decision.
- B) Characteristics of direction. **4**
4. Solve **any two** from the following : **14**
- 1) Explain importance of motivation.
 - 2) Functions and qualities of leader. Discuss.
 - 3) Various methods of staffing.
5. Solve **any two** from the following : **14**
- 1) Explain Herzberg's two factor theory.
 - 2) Decision making process.
 - 3) Managerial process, explain with diagrammatic representation.
-



Seat No.	
-------------	--

B.Sc. – II (Semester – III) (CGPA) Examination, 2017
ENTREPRENEURSHIP : Paper – IV
Advanced Accountancy and Auditing

Time : 2.30 Hours

Max. Marks : 70

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 given below : **14**
- i) Intentional misrepresentation means _____
 - a) Errors of commission
 - b) Errors of duplication
 - c) Frauds
 - d) None of the above
 - ii) The gross profit is transferred to _____ account.
 - a) Trading
 - b) Profit and loss
 - c) Purchases
 - d) Sales
 - iii) Management audit otherwise called as _____
 - a) Final audit
 - b) Efficiency audit
 - c) Cost audit
 - d) Cash audit
 - iv) To find out net profit or net loss of the business _____ account is prepared.
 - a) Trading
 - b) P and L
 - c) Balance sheet
 - d) Cash
 - v) An auditor is not a _____ yet he is intimately connected with values.
 - a) Verifier
 - b) Checker
 - c) Recorder
 - d) Valuer
 - vi) Risk insured against death is a contract of _____
 - a) Agreement
 - b) Indemnity
 - c) Assurance
 - d) Caveat emptor
 - vii) The objectives of cash flow statement are _____
 - a) Analysis of cash position
 - b) Short term cash planning
 - c) Evaluation of liquidity and operating performance
 - d) All of the above



- viii) First auditor can be removed by the _____ in the First Annual General meeting.
- a) Central government b) Shareholders
c) Directors of company d) None of the above
- ix) Audit means _____
- a) Recording business transaction
b) Preparing the final A/c
c) Examination of book, account, voucher
d) None of these
- x) The methodical classification of financial statement is called _____
- a) An interpretation b) An analysis
c) Ratio d) Profit and loss A/c
- xi) Outstanding expenses is a _____ account.
- a) Real b) Personal
c) Nominal d) None of these
- xii) _____ means determine the fair value of assets and liabilities.
- a) Valuation b) Audit
c) Interim d) Continuous audit
- xiii) Internal check is meant for _____
- a) Prevention of frauds b) Detection of frauds
c) Detection of errors d) Helping audit in depth
- xiv) Purchase of machinery is a _____
- a) Revenue receipt b) Capital expenditure
c) Capital receipt d) Revenue expenditure

2. Solve **any 7** of the following :

14

- 1) Explain basic concepts of auditing.
- 2) What is a working capital ?
- 3) What is meant by external audit and internal audit ?
- 4) Types and classes of voucher.
- 5) What is meant by verification of assets and liabilities ?
- 6) Explain the objectives of final accounts.
- 7) Explain the concepts of funds flow and cash flow.
- 8) Qualification and disqualification.
- 9) Bank reconciliation statement.



3. A) Attempt **any 2** of the following : 10

1) Prepare trial balance from the following ledger of M/s. Atharva as on 31st March, 2008. Particulars, capital Rs. 50,000, Debtors Rs. 2,500, Wages Rs. 3,500, Depreciation Rs. 1,500, Furniture Rs. 12,500, advertisement Rs. 2,500, Bad debts Rs. 600, Carriage Rs. 2,500, Purchase Rs. 15,000, Salary Rs. 4,500, Sales Rs. 40,000, Postage Rs. 250, Creditors Rs. 4,000, Land and Building Rs. 45,000, Bank Loan Rs. 2,000, Cash in hand Rs. 1,250, Rent Rs. 2,900, Drawings Rs. 1,500.

2) Complete the following table and comment.

Particulars	P Ltd.	Q Ltd.	R Ltd.
Current assets	2,31,000	4,25,000	1,80,000
Current liabilities	1,11,000	2,91,000	95,000
Working capital			
Current Ratio	?	?	?
Remark			

3) Explain the nature and scope of audit.

B) What is trial balance ? State its objectives. 4

4. Attempt **any 2** of the following : 14

- 1) State qualifications and disqualifications of a company auditor.
- 2) What are the classification of accounts ? What are the Golden Rules of Accounting ?
- 3) Prepare Profit and Loss Account of Mr. Sudhir for the year ended 31st March, 2007 from the following balances.

Particulars	Rs.	Particulars	Rs.
Bank charges	2,200	Commission (Cr.)	1,750
Interest (Cr.)	1,600	Printing and Stationery	2,100
Sundry expenses	4,200	Loss by fire	1,800
Insurance	3,500	Discount	2,300
Salaries	4,000	Discount received	3,700
Rates and taxes	1,300	Miscellaneous	1,400
Postage	800	Income depreciation	3,400
Advertisement	4,000	Godown expenses	4,000
Rent	3,200	Carriage outward	6,000
Bad debts	1,000		

Note : Gross profit Rs. 40,750.



5. Attempt **any 2** of the following :

14

1) Balance sheet of X and Co. Ltd.

Liabilities	2001 (Rs.)	2002 (Rs.)	Assets	2001 (Rs.)	2002 (Rs.)
Share capital	1,60,000	1,90,000	Machinery	1,90,000	2,00,000
Debentures	60,000	40,000	Stock	45,000	60,000
Profit and loss	50,000	60,000	Sundry debtors	55,000	70,000
Sundry creditors	45,000	55,000	Cash	35,000	20,000
Outstanding expenses	35,000	25,000	Furniture	25,000	20,000
	3,50,000	3,70,000		3,50,000	3,70,000

Prepare a statement showing change in working capital.

- 2) Define audit. Explain special features of audit in respect of audit of co-operative societies.
- 3) Explain in detail vouching of cash and credit transactions.



Seat No.	
----------	--

**B.Sc. II (Semester – III) (CGPA) Examination, 2017
(Entrepreneurship)
MICROBIAL BIOTECHNOLOGY
Genetics (Paper – III)**

Time : 2 ½ Hours

Max. Marks : 70

- N.B. :** 1) **All questions are compulsory and carry equal marks.**
2) **Draw a neat labelled diagram wherever necessary.**
3) **Figure to the right indicate full marks.**

1. Rewrite the following sentences by choosing correct alternatives from given below.

14

- i) Exchange of segment between non-homologous chromosome is called, _____
a) Translocation b) Transformation c) Transduction d) All of the above
- ii) _____ contain more than one and less than five chromosome.
a) Acentromere b) Centromere c) Telomere d) Chromatid
- iii) Cross made between offspring and its parents is called as _____
a) monohybrid cross b) dihybrid cross
c) back cross d) test cross
- iv) _____ is described when two opposite alleles come close together and one of the two finds morphological expression masking other in the body of the organism.
a) Law of inheritance b) Law of dominance
c) Law of segregation d) None of these
- v) _____ affects only a single nucleotide.
a) Point mutation b) Frame shift mutation
c) Mis-sence mutation d) Non-Sense mutation
- vi) George Mendel is _____
a) A little known Central European monk
b) Dutch biologist who carried out genetics research in an early 20th century
c) An English scientist who carried out research with Charles Darwin
d) None



- vii) _____ is formed when an octamer of 4 histones complexed with DNA.
a) Centromere b) Endosome c) Nucleosome d) None of the above
- viii) _____ is an example of base analogue.
a) MMS b) 5BU c) EMS d) None of these
- ix) Ultraviolet light causes mutation by _____
a) By forming intercalating agent
b) Acting as a free radical
c) Formation of Thymine dimers
d) By changing a DNA nucleotide into a different DNA nucleotide
- x) _____ would be the F2 phenotypic ratio, in a genetic cross having recessive Epistasis.
a) 9:6:1 b) 9:3:4 c) 12:3:1 d) 15:1
- xi) _____ number of chromosomes are found in each human gamete ?
a) 23 b) 46 c) 13 d) 96
- xii) Down syndrome is _____
a) Monosomy 19 b) Monosomy 21
c) Trisomy 19 d) Trisomy 21
- xiii) _____ statement is correct with respect to Aneuploidy.
a) Inversion b) $2n$ c) $2n+1$ d) Mutation
- xiv) _____ could be the condition if the child is born with an extra chromosome in each of its cells.
a) Non-disjunction b) Segregation
c) Recombination d) None of the above

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

14

- i) Define Dominant Epistasis.
- ii) Write a note on Law of Segregation.
- iii) Write a short note on Transformation.
- iv) Define mode and explain it.
- v) Write a note on histones.



- vi) Explain Linkage.
 - vii) Write a note on mutagenic agents.
 - viii) Explain dihybrid ratio
 - ix) Explain Aneuploidy.
3. A) Answer **any two** of the following : **10**
- i) Explain in detail theories of crossing over.
 - ii) Write a in detail Incomplete dominance.
 - iii) Explain in detail Mutagenic agents.
- B) Write in detail on transformation. **4**
4. Answer **any two** of the following. **14**
- i) Write a detail note on Karyotyping.
 - ii) Write in detail Duplicate Dominant Epistasis.
 - iii) Explain Crossing over and write a note on Factors affecting crossing over.
5. Answer **any two** of the following. **14**
- i) Write a detailed note on Mendel's experiment.
 - ii) Define Co-Dominance and Incomplete dominance with suitable example.
 - iii) Write in detail Spontaneous and induced mutation.
-



- vii) The PH of fermentation media for commercial production of citric acid is _____
A) 1 to 2 B) 2 to 3 C) 5 to 6 D) 7 to 9
- viii) _____ is a antibiotic which inhibit bacterial protein synthesis.
A) Penicillin B) Streptomycin
C) Sulphonamide D) Quinolone
- ix) _____ is a biopesticide used to control pest to enhance economical value.
A) *Rhizobium* B) *Azolla*
C) *Azotobacter* D) *Bacillus thuriengensis*
- x) _____ is a fat soluble cobalt containing vitamin.
A) Vitamin D B) Vitamin B12
C) Vitamin C D) Vitamin A
- xi) The removal of nitrogen and phosphorous carried out in _____ treatment of water.
A) Primary B) Secondary C) Tertiary D) Mechanical
- xii) _____ is a nonsymbiotic nitrogen fixing organism.
A) *Rhizobium* B) *Pseudomonas*
C) *Azotobacter* D) *Bacillus*
- xiii) The filtering medium of trickling filter with microbes known as _____ film.
A) Zooglia B) Geogical
C) Activated sludge D) None of these
- xiv) Degradation of aromatic hydrocarbons with the help of microbes called as _____
A) Biolistic B) Bioremediation
C) Enrichment D) Bioagumentation

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

14

- i) Define Beta lactum antibiotic.
- ii) What are the advantage of SCP ?
- iii) Enlist types of beer.



- iv) Enlist uses of citric acid.
 - v) Types of Amylases.
 - vi) Define biofertilizer.
 - vii) Define biogas.
 - viii) Enlist methods of industrial waste treatment.
 - ix) Biodiesel.
3. A) Answer **any two** of the following : **10**
- i) Describe in brief ethanol production by using molasses as fermentation media.
 - ii) Discuss in detail citric acid production.
 - iii) Describe in detail L-lysine production.
- B) Give a detailed account on penicillin production. **4**
4. Answer **any two** of the following : **14**
- i) Describe in detail production of wine.
 - ii) Explain in detail biopesticide production.
 - iii) Discuss in detail methods of biogas production.
5. Answer **any two** of the following : **14**
- i) Define biofertilizer. Give detailed account on non symbiotic nitrogen fixation.
 - ii) Discuss in detail biological treatments of industrial wastes.
 - iii) Describe in detail SCP production by fermentation.
-



Seat No.	
-------------	--

B.Sc. – II (Semester – IV) (CGPA) Examination, 2017
ENTREPRENEURSHIP (Paper – V)
Corporate Accounting and Professional Ethics

Time : 2½ Hours

Max. Marks : 70

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

1. Multiple Choice Questions :

14

- 1) _____ is a code of conduct that an individual or a group has about right and wrong.
 - a) Morality
 - b) Ethics
 - c) Business ethics
 - d) Personal ethics
- 2) Consolidated financial statement are prepared as per accounting standard
 - a) 19
 - b) 21
 - c) 23
 - d) 30
- 3) Forces affecting organisational behaviour are
 - a) People
 - b) Environment
 - c) Technology
 - d) All of the above
- 4) The best measure of competitiveness is classified as
 - a) Gross margin
 - b) Income margin
 - c) Sales margin
 - d) Cost margin
- 5) Equality of income and equality of opportunity is refers to
 - a) Equality
 - b) Political equality
 - c) Economic equality
 - d) Human equality
- 6) Share allotment account is
 - a) Personal
 - b) Real
 - c) Nominal
 - d) All the above
- 7) Which one of the following is an alternative to moral principles ?
 - a) Virtue ethics
 - b) Logic ethics
 - c) Real ethics
 - d) Both a) and b)

P.T.O.



- 8) Public Ltd. Companies cannot issue
- a) Equity shares
 - b) Deferred shares
 - c) Preference shares
 - d) Valuation shares
- 9) The maximum allowable discount on Equity shares is
- a) 10%
 - b) 8%
 - c) 5%
 - d) 6%
- 10) Dividend is usually paid on
- a) Called-up-capital
 - b) Nominal capital
 - c) Paid-up-capital
 - d) None of these
- 11) Profit on re-issue of forfeited shares is transferred to
- a) Revenue Reserve
 - b) General Reserve
 - c) Capital Reserve
 - d) All the above
- 12) Preference shareholder are
- a) Creditors of the company
 - b) Owner of the company
 - c) Customers of the company
 - d) Both a) and b)
- 13) Globalisation opportunities for paid work for women has denied them
- a) Good health
 - b) Good education
 - c) Permanent job
 - d) None of these
- 14) Equity does not include
- a) Equity share capital
 - b) Preference share capital
 - c) Reserve and surplus
 - d) Debentures

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

14

- 1) Define corporate social responsibility.
- 2) Features of forfeiture of shares.
- 3) Write note on absorption and mergers.
- 4) Definition of corporate governance.
- 5) Creating ethical organization.
- 6) What is meant by Holding Company ?
- 7) Roll of MNCs.
- 8) Corporate culture.



3. A) Attempt **any two** of the following : **10**
- 1) Intrinsic value method.
 - 2) Ethics-in-HRM.
 - 3) Explain in detail – Corporate Governance, Corporate Culture and CSR.
- B) Discuss in Amalgamation, Absorption and Mergers. **4**
4. Attempt **any two** of the following : **14**
- 1) Define business ethics. Discuss in detail HRM ethics, marketing ethics and IT.
 - 2) Concept and theories of ethics.
 - 3) Amaravati Products Ltd.

Balance as on 31-3-2003

Liability	Rs.	Assets	Rs.
Equity share capital	3,00,000	Cash in hand	40,000
Preference share capital	30,000	Building	60,000
Debentures	35,000	Machinery	1,00,000
Sundry creditors	28,000	Stock	50,000
Pref. creditors	7,000	P and L (Loss)	1,50,000
Total	4,00,000	Total	4,00,000

- 1) The company went into Liquidation and Assets realised as under :
- a) Building Rs. 80,000
 - b) Machinery Rs. 78,000
 - c) Stock Rs. 22,000.
- 2) Liquidation and legal expenses Rs. 8,000.
- 3) Liquidators remuneration is 3% on assets realized.
- Prepare Liquidators Final Statement of Account.



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

14

1) Clinton Corporation Ltd.

10000, 12% Pref. shares of Rs. 10 each	1,00,000
25000 Equity shares of Rs. 10 each	2,50,000
Average annual profit before tax	2,00,000
Income tax	30%
Transfer to Reserves	20%
Normal return in similar industry	25%

Mr. Saddam hold 200 Equity shares of the company he has requested you value his share holding on the basis of above information.

2) P Ltd. acquired 9000 Equity shares of Q Ltd. on 1-4-2005 for Rs. 2,50,000. Q Ltd. provides you following information as an 31-3-2006 :

- Equity share capital 10000 Equity shares of Rs. 10 each.
- General Reserve Rs. 42,000 (on 1-4-2005 Rs. 12,000).
- Profit and Loss A/c Rs. 48,000 (on 1-4-2005 Rs. 20,000).

Prepare a statement showing Capital Profit, Revenue Profit and Minority Interest and Goodwill.

3) Explain in detail corporate governance.



Seat No.	
---------------------	--

**B.Sc. – II (Semester – IV) (CGPA) Examination, 2017
ENTREPRENEURSHIP (Paper – VI)
Marketing Decision & International Marketing**

Time : 2½ Hours

Total. Marks : 70

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

- 1) Competition tends to focus on _____ as a product moves through its life cycle.
a) Impulse b) Pulse c) Quantity d) Price
- 2) Optimum marketing mix is obtained using analysis _____ implementation and control.
a) Planning b) Organization c) Decision d) Marketing
- 3) _____ are difficult to change.
a) Attitude b) Behaviour c) Habit d) Personality
- 4) It is the process of identifying smaller markets within a larger market
a) Track b) Segmentation
c) Desegmentation d) Global
- 5) After sales service is provided in a customer oriented firm
a) True b) False
- 6) The tangible inputs in a business are
a) Capital b) Technology c) Information d) Behaviour
- 7) Consumer behaviour is more challenging across international border
a) True b) False
- 8) The tool that a sender uses to reach to the receiver is called
a) Communication b) Message c) Letter d) Order
- 9) Consumer behaviour is easy to understand in familiar country like India for Indians.
a) True b) False
- 10) Buyer's response in _____ method may not be applicable in other markets.
a) Market tests b) Market environment
c) Marketing mix d) None of these

P.T.O.



- 8) According to Wheatstone bridge principle, unknown resistance is opposed by known resistance until both are
a) different b) balanced c) lower d) higher
- 9) The ratio of intensity of transmitted light to the intensity of incident light is known as
a) opacity b) absorbance
c) transmittance d) all the these
- 10) The temperature of the flame in flame photometer is controlled by
a) type of fuel b) type of burner
c) type of solvent d) all of these
- 11) The sum of the two transport numbers is always
a) zero b) unity c) two d) none of these
- 12) According to latest convention, the emf of cell may be expressed as
a) $E_{\text{Cell}} = E_{\text{R}} - E_{\text{L}}$ b) $E_{\text{Cell}} = E_{\text{L}} - E_{\text{R}}$
c) $E_{\text{Cell}} = E_{\text{R}} + E_{\text{L}}$ d) $E_{\text{Cell}} = E_{\text{R}} * E_{\text{L}}$
- 13) Which of the following can be considered a weak electrolyte ?
a) KCl b) NaCl c) NaOH d) NH_4OH
- 14) Flame photometric technique is used in _____ analysis.
a) qualitative b) quantitative
c) both a and b d) none of these

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

14

- i) Define the terms :
 - a) Conductance.
 - b) Equivalent conductance.
- ii) Show the nature of graphs obtained by classical and analytical methods for locating end points in potentiometric titrations.
- iii) How conductivity water is prepared ?
- iv) What are conductometric titrations ?
- v) State Beer's law.
- vi) Draw a block diagram of the equipment used in flame photometer.
- vii) What is buffer solution ? Mention types of buffer solution.
- viii) What are the limitations of flame photometry ?
- ix) Write Onsager equation and mention terms involved.



3. A) Answer **any two** of the following : 10
- i) What is cell constant ? How it is determined ?
 - ii) Discuss the various deviations from Beer's law.
 - iii) Explain the general principle of flame photometry.
- B) What is transport number ? 4
- At 298 K the velocities of migration of K^+ and Cl^- ions are 7.62×10^{-4} and 7.91×10^{-4} cm/sec. respectively. Calculate the transport number of K^+ and Cl^- ions.
4. Answer **any two** of the following : 14
- i) Mention different methods of determination of transport number. Describe moving boundary method.
 - ii) Describe potentiometric redox titration with suitable example. Give advantages of potentiometric titrations.
 - iii) Mention types of conductometric acid-base titrations. Explain any one type with suitable example.
5. Answer **any two** of the following : 14
- i) Describe construction and working of glass electrode. Discuss its use in determination of pH of solution.
 - ii) Explain the construction and working of single cell photoelectric colorimeter with schematic diagram.
 - iii) Mention various components of flame photometer. Describe laminar-flow burner in detail.
-



Seat No.	
----------	--

B.Sc. (Part – II) (Semester – IV) (Entrepreneurship) (CGPA) Examination, 2017
INDUSTRIAL CHEMISTRY (Paper – VI)
Industrial Aspects of Applied Chemistry

Time : 2½ Hours

Total Marks : 70

- Instructions :** 1) **All** questions are **compulsory**.
2) Draw **neat** labelled diagram and give equations **wherever** necessary.
3) **All** questions carry **equal** marks.
4) Figures to the **right** indicate **full** marks.

1. Select the most correct alternative from among those given below and rewrite the sentence : 14
- i) Mineral from which metals can be extracted economical and profitable is called as
a) Ore b) Mineral c) Flux d) Slag
- ii) _____ steel contains iron with 12 - 15% Cr and 0.3% C.
a) Nickel b) Manganese
c) Stainless d) Chromium
- iii) The substance which is used to remove the gangue from the ore is called as
a) matrix b) slag c) gangue d) flux
- iv) Coating of oxide film on surface of Al and its alloy by the _____ process.
a) Electrolysis b) Electrophoresis
c) Anodizing d) All of these
- v) If anode efficiency is greater than cathode efficiency, the bath becomes _____ in metal content.
a) rich b) poor c) both a) and b) d) none of these
- vi) _____ has highest nitrogen content (46-47%).
a) Ammonium sulphate b) Potassium fertilizers
c) Super phosphate d) Urea



3. A) Attempt **any two** of the following : **10**
- i) Write a note on concentration of ore by chemical methods.
 - ii) Give the brief explanation of anodizing.
 - iii) Explain in brief manufacturing of super phosphate.
- B) How the pot furnace are used for manufacturing of glasses. **4**
4. Answer **any two** of the following : **14**
- i) How the Bessemer process is effectively used for the manufacture of steel ?
 - ii) Describe electroplating of nickel.
 - iii) Give the classification of fertilizers and qualities required for ideal fertilizer.
5. Answer **any two** of the following : **14**
- i) Explain the extraction of iron by blast furance.
 - ii) Explain types of cement and their application in details.
 - iii) Explain the types of glasses manufactured for different applications.
-



- vii) Direct repair mechanism of DNA repair is also called as _____ repair mechanism.
a) dark b) light c) photoreactivation d) SOS
- viii) _____ is an example of restriction enzyme.
a) EcoRI b) pBR322 c) SV40 d) helicase
- ix) Thermal cyclor is
a) RFLP b) FISH c) PCR d) Water bath
- x) _____ repair is not a DNA repair mechanism.
a) Direct b) Excision c) SOS d) JAM
- xi) _____ is a termination codon.
a) UAA b) AUG c) GUG d) AAT
- xii) Biological function of DNA ligase is the joining of DNA fragments in
a) host cell b) god c) prions d) none
- xiii) Lactose acts as _____ for Lac operon.
a) suppressor b) inducer c) inhibitor d) toxin
- xiv) _____ is component present in operon model.
a) Operator b) Primer c) Cleft d) None

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

14

- i) Define transcription.
- ii) Enlist the components required for translation.
- iii) Give any two examples of restriction enzymes.
- iv) Draw the structure of trp operon.
- v) What is DNA motif ?
- vi) Enlist any two post transcriptional modifications.
- vii) What is okazaki fragment ?
- viii) What is replicon ?
- ix) Draw the structure of t-RNA.



3. A) Attempt **any two** of the following : **10**
- i) Write a note on direct DNA repair mechanism.
 - ii) Write a note on post transcriptional modification.
 - iii) Explain the types of RNA with their structure.
- B) Explain Lac operon in detail. **4**
4. Answer **any two** of the following : **14**
- i) Explain the process of translation in detail.
 - ii) Explain the process of transcription in prokaryotic cell.
 - iii) Explain the mode of Restriction Fragment Length Polymorphism.
5. Answer **any two** of the following : **14**
- i) Give a detailed account on isolation of nucleic acid.
 - ii) What is DNA sequencing ? Explain the methods of DNA sequencing.
 - iii) What is DNA repair ? How does DNA damage take place ? Explain SOS repair for DNA damage.
-



Seat No.	
-------------	--

B.Sc. II (Semester – IV) (Entrepreneurship) (CGPA) Examination, 2017
MICROBIAL BIOTECHNOLOGY (Paper – VI)
Food & Dairy Technology

Time : 2.30 Hours

Max. Marks : 70

- N.B. :** 1) **All the questions are compulsory and carry equal marks.**
2) **Draw a neat labelled diagram wherever necessary.**
3) **Figures to the right indicate full marks.**

1. Rewrite the following sentences by choosing correct alternative. **14**
- 1) Bulgarian buttermilk is made with the help of
 - a) Lactobacillus bulgaricus
 - b) Streptococcus lactis
 - c) Streptococcus thermophilus
 - d) E.coli
 - 2) Which of the following is not an intrinsic factor in food spoilage ?
 - a) pH
 - b) moisture content
 - c) available nutrient
 - d) temperature
 - 3) MPN stands for
 - a) Multi Probable Number
 - b) Most Probable Number
 - c) Maximum Probable Number
 - d) Minimum Probable Number
 - 4) _____ causes black mold rot in different fruits.
 - a) Bacillus subtilis
 - b) E.coli
 - c) Penicillium notatum
 - d) Aspergillus niger
 - 5) Preservation system using radiation is also known as
 - a) Heat sterilization
 - b) Pasteurization
 - c) Dry sterilization
 - d) Tyndallization
 - 6) The major protein in milk is
 - a) Albumin
 - b) Casein
 - c) Bovine serum
 - d) α -albumin
 - 7) _____ °C temperature used in LTH method of pasteurization.
 - a) 71.1°C
 - b) 62.8°C
 - c) 100°C
 - d) 150°C



3. A) Answer **any two** of the following : **10**
- 1) Food and nutritive value of milk.
 - 2) Write note on tanned milk.
 - 3) Explain cream preparation.
- B) Describe in detail food as a substrate for microorganism. **4**
4. Answer **any two** of the following : **14**
- 1) Explain in detail microbial examination of food.
 - 2) Describe in detail cheese production.
 - 3) Write in detail microbial food poisoning.
5. Answer **any two** of the following : **14**
- 1) Describe in detail food preservation methods.
 - 2) Explain in detail Ice-cream preparation.
 - 3) Write in detail factor affecting on milk composition.
-



Seat No.	
----------	--

**B.Sc. – III (Entrepreneurship) (Semester – V) (New CGPA)
Examination, 2017
SPECTROSCOPIC METHODS**

Time : 2½ Hours

Max. Marks : 70

- N. B. :** 1) **All questions are compulsory.**
2) Figures to **right** indicate **full** marks.
3) **Draw neat labelled diagram and give equation wherever necessary.**

1. Select most correct alternative among the following and rewrite the sentences : **14**

- i) NMR spectra of n-butane shows _____ signals.
a) 2 b) 3 c) 4 d) 5
- ii) IR spectroscopy is used to determine _____
a) Function group b) Molecular formula
c) Conjugation d) No. of protons
- iii) Unsaturated groups in the compounds are known as _____ group.
a) Auxochromic b) Chromophoric
c) Hypsochromic d) Hypochromic
- iv) The fragment ion of methane are _____
a) CH_3^+ b) C^+ c) H^+ d) All of these
- v) In NMR spectroscopy _____ radiations are used.
a) Radio frequency b) Ultra-violet
c) Infrared d) Visible
- vi) The number of fundamental modes of vibrations in the case of CO_2 are _____
a) 6 b) 3 c) 4 d) 9
- vii) When absorption maxima value of certain molecule is shifted towards shorter wavelength such effect is known as _____ effect.
a) hypochromic b) bathochromic
c) hyperchromic d) hypsochromic

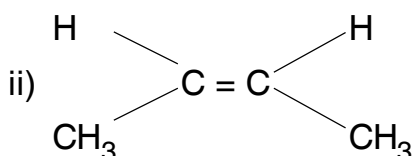
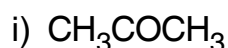


- viii) In mass spectroscopy neutral organic molecule in gaseous state at elevated temperature and reduced pressure is bombarded with _____
 a) e^- b) proton c) neutron d) γ -rays
- ix) When there is N number of equivalent protons on adjacent atoms to a given proton then multiplicity of proton is given by _____ rule.
 a) $N + 2$ b) $N + 1$ c) $N - 1$ d) $N + 3$
- x) The characteristic frequency range of the carbonyl compound is _____
 a) 1700 cm^{-1} b) 3080 cm^{-1}
 c) 3300 cm^{-1} d) 950 cm^{-1}
- xi) The group which does not produce colour itself but due to presence of _____ group the intensity of colour increases.
 a) Auxochromic b) Chromophoric
 c) Bathochromic d) Hypochromic
- xii) In mass spectrum intensity assigned to base peak is _____
 a) 50 b) 75 c) 100 d) 0
- xiii) _____ is the finger print region.
 a) 1350 – 4000 b) 4000 – 12500
 c) 50 – 650 d) 650 – 1350
- xiv) 1,2-dibromopropane contains _____ types.
 a) 2 b) 1 c) 4 d) 3

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

14

- i) Explain shielding and deshielding of protons.
- ii) What do you understand base peak ?
- iii) Gives the applications of UV spectroscopy.
- iv) Write the principle of IR spectroscopy.
- v) How many no. of signals are given by following compounds :



- vi) Write the applications of mass spectroscopy.



- vii) Explain bathochromic shift.
- viii) State and explain Hooks law.
- ix) Define equivalent and non-equivalent protons.

3. A) Write short notes on : 10

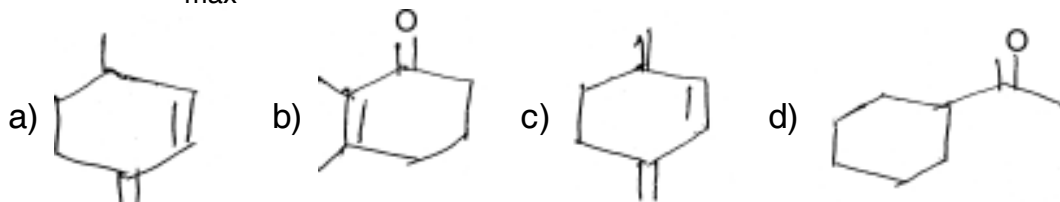
- i) TMS as reference.
- ii) Effect of conjugation on position of UV visible bands.
- iii) Applications of IR spectroscopy.

B) Match the following : 4

Molecular formula	1675 cm ⁻¹
Spin-spin coupling	UV-spectroscopy
Wood-ward Fieser rule	PMR
C – NH ₂	Mass
$\begin{array}{c} \\ O \end{array}$	

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

i) Calculate λ_{max} of following compounds.



- ii) Explain spectra of 1,2-dibromoethane.
- iii) Explain types of ions formed in mass spectroscopy.

5. Answer **any two** of the following : 14

- i) Explain types of electronic transitions in UV spectroscopy.
- ii) Explain types of vibrations.

iii) Assign the structure of compound with following data :

Molecular formula C₇H₈O

IR 3620

m/e 108

PMR – δ 1.5 (s, 2H)

3.6 (s, 1H)

7.3 (s, 5H).



TABLE - 1
Characteristic Infrared Absorptions of Functional Groups

GROUP	FREQUENCY RANGE cm^{-1}	INTENSITY
A. Alkyl		
C - H (stretching)	2853 - 2962	(m - s)
Isopropyl - $\text{CH}(\text{CH}_3)_2$	1380 - 1385	(s)
	and 1365 - 1370	(s)
tert - Butyl - $\text{C}(\text{CH}_3)_3$	1385 - 1395	(m)
	and - 1365	(s)
B. Alkenyl		
C-H (stretching)	3010 - 3095	(m)
C = C (stretching)	1620 - 1680	(v)
R - $\text{CH} = \text{CH}_2$	985 - 1000	(s)
	and 905 - 920	(s)
$\text{R}_2\text{C} = \text{CH}_2$	880 - 900	(s)
cis - $\text{RCH} = \text{CHR}$	(out of plane C-H bendings) 675 - 730	(s)
trans - $\text{RCH} = \text{CHR}$	960 - 975	(s)
C. Alkynyl		
$\equiv \text{C} - \text{H}$ (stretching)	- 3300	(s)
$\text{C} \equiv \text{C}$ (stretching)	2100 - 2260	(v)
D. Aromatic		
Ar - H (stretching)	- 3030	(v)
Aromatic substitution type (C-H out-of-plane bendings)		
Monosubstituted	690 - 710	(very s)
	and 730 - 770	(very s)
o - Disubstituted	735 - 770	(s)
m - Disubstituted	680 - 725	(s)
	and 750 - 810	(very s)
p - Disubstituted	800 - 840	(very s)
E. Alcohols, Phenols, Carboxylic Acids		
OH (alcohols, phenols, dilute solutions)	3590 - 3650	(sharp v)
OH (alcohols, phenols, hydrogen bonded)	3200 - 3550	(broad s)
OH (carboxylic acids, hydrogen bonded)	2500 - 3000	(broad v)
F. Aldehydes, Ketones, Esters and Carboxylic Acids		
C = O stretch	1720	
aldehydes - 1720 (Stre 2700 - 2900)	1630 - 1780	(s)
ketones	1680 - 1750	(s)
esters	1735 - 1750	(s)
carboxylic acids	1710 - 1780	(s)
amides	1630 - 1690	(s)
G. Amines		
N - H	3300 - 3500	(m)
H. Nitriles		
C = N	2220 - 2260	(m)



Spectroscopic Chart

Woodward's-Fieser's rules for calculating ultraviolet absorption maxima

A) For substituted dienes (Ethanol solution)

No.	Basic Value	λ_{max} (nm)
1)	Acyclic and heteroannular dienes	214
2)	Homoannular dienes	253
3)	Addition for each substituent	
	a) - R alkyl (including part of carbocyclic ring)	5
	b) - OR (alkoxy)	6
	c) - Cl, -Br	5
	d) - OCOR (acyloxy)	0
	e) - NR ₂ , (N - alkyl)	60
	f) - SR (S - alkyl)	30
	g) - CH = CH - additional conjugation i.e. extending conjugation	30
	h) If one double bond is exocyclic to one ring	5
	i) If exocyclic to two rings simultaneously	10

B) Rules for α, β - Unsaturated Enones (Ethanol Solution)

No.	Basic value	λ_{\max} (nm)
1)	Ketones : $\begin{array}{c} \beta \\ \\ -\text{C} = \text{C} - \text{CO} - \\ \end{array}$	
	a) Acyclic or 6 - membered ring	215
	b) 5 - membered ring	202
2)	Aldehydes $\begin{array}{c} \quad \\ -\text{C} = \text{C} - \text{CHO} \end{array}$	207
3)	Extended Conjugation $\begin{array}{c} \delta \quad \gamma \quad \beta \quad \alpha \\ \quad \quad \quad \\ -\text{C} = \text{C} - \text{C} = \text{C} - \text{CO} - \text{etc.,} \end{array}$	30
4)	Homodiene component	39
5)	a) If one double bond is exocyclic to one ring	5
	b) If exocyclic to two rings simultaneously	10
6)	Addition for substituents	



	Substituents	Position			
		α	β	γ	δ
a)	- R alkyl (including part of carbocyclic ring)	10	12	18	18
b)	- OR (alkoxy)	35	30	17	31
c)	- OH (hydroxy)	35	30	-	50
d)	- SR (thioether)	-	85	-	-
e)	- Cl (chloro)	15	12	-	-
f)	- Br (bromo)	25	30	-	-
g)	- OCOR (acyloxy)	6	6	-	6
h)	- NH ₂ , - NHR, - NR ₂	-	95	-	-

Solvent correction

	Solvent	
a)	Ethanol	0
b)	Methanol	0
c)	Dioxan	-5
d)	Chloroform	-1
e)	Ether	-7
f)	Water	+8
g)	Hexane	-11
h)	Cyclohexane	-11



Seat No.	
----------	--

B.Sc. – III (Semester – VI) (Entrepreneurship) (New-CGPA) Examination, 2017
ENGLISH (Compulsory)
Breakthrough

Time : 2.30 Hours

Max. Marks : 70

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

1. A) Choose the correct alternative : 10
- 1) Who said "Hello, old chap, you got to work, hey" ?
 - a) Jim
 - b) Ben Rogers
 - c) Tom
 - d) Billy Fisher
 - 2) Tom promises Jim to give _____ in exchange of whitewashing the fence.
 - a) a jews-harp
 - b) a tin soldier
 - c) a white alley
 - d) a spool cannon
 - 3) Mathilde does not want to go to the palace at the Ministry for party because _____.
 - a) she has no friends
 - b) she has no car to go by
 - c) she has no fancy clothes and jewels to wear
 - d) she is too tired to go
 - 4) Loisel gave Mathilde _____ to buy a petty dress for the party.
 - a) four hundred francs
 - b) three hundred francs
 - c) five hundred francs
 - d) six hundred francs
 - 5) Pyramus and Thisbe live resided in _____.
 - a) Rome
 - b) Greece
 - c) Sidon
 - d) Babylonia
 - 6) How did Pyramus and Thisbe communicate ?
 - a) through a crack in the wall
 - b) by whispering through the windows
 - c) standing outside
 - d) via letters and notes



- 7) What do maidens grind ?
- a) ginger, rosewood, turmeric b) sandalwood, henna, spice
c) beetroot, chilly, mustard d) potatoes, tomatoes, wheat
- 8) What do magicians chant ?
- a) notes into paper b) plate into spoon
c) gold into copper d) spells for the aeons to come
- 9) *Teach me a better strain, a nobler lay,
O Thou, enthroned with _____ in the realms of day!*
- a) Cherubs b) God c) Queen d) Virtue
- 10) According to poet Phillis Wheatley, wisdom is higher than _____ can reach.
- a) an angel b) a fool c) a wise d) a man

B) Do as directed :

4

- 1) My e-mail to Rita bounced back. (Make it a compound sentence)
- 2) Take care of the pence and the pounds will take care of themselves. (Change into a complex sentence)
- 3) She has been cooking all day. (Add a question tag)
- 4) This is the house. Sachin was born here. (Combine these sentences using relative adverb)

2. Answer **any seven** of the following questions in short.

14

- 1) Compare the myth of Pyramus and Thisbe to Shakespeare's '*Romeo and Juliet*'.
- 2) Do you think that Pyramus, and Thisbe are star-crossed lovers ? Justify your answer.
- 3) What action does Pyramus perform when he thinks Thisbe is dead ?
- 4) Does the story '*The Necklace*' have a moral ? What is it ?
- 5) Do you think that the course of action the Loiseles chose after the loss of the necklace was right ? What other choices were open to them ?
- 6) Comment briefly on the title of the story *The Necklace*.
- 7) Describe the character of Tom in '*Whitewashing the Fence*'.
- 8) What did Tom's friends do when they saw him painting the fence ?



3. A) Answer **any two** of the following : **8**
- 1) Compare the bazaar described in the poem '*In the Bazaars of Hyderabad*' with today's shopping malls. What differences do you find between them ?
 - 2) What is the central idea of the poem '*On Virtue*' ?
 - 3) What is your own conception of heaven ? How, according to you, can we attain the kingdom of heaven ?
- B) Answer **any two** of the following : **6**
- 1) Describe the strategies for managing the work stress with a suitable example.
 - 2) Write an example of a problem you have faced in the past. How did you solve it ?
 - 3) Write about the biggest change that you had to deal with. How did you adapt to that change ?
4. Imagine that you are walking through a lovely, dark and deep forest. Write a detailed description of the forest. **14**

OR

Imagine that you are travelling by rail and you come across two orphan girls begging in the rail. Write an imaginative story of these two begging girls.

5. Read the following passage and write the summary of it. **14**

Elimination of illiteracy has been one of the major concerns of our government since Independence. Illiteracy is a serious obstacle to the establishment of a social order based on equality. It withholds the development of the individual, society and the nation.

The position of our country as compared to that of vie literacy today is 90th in the world of the present trend continues, then we would be entering the twenty-first century with 55 crore illiterate-55 per cent of the total illiterates in the world or in other words, India would have a larger body of illiterate people than any other country in the world.

It was targeted to achieve 100 per cent literacy amongst those in the 15-35 age group during the Eighth Plan. This means that 10 crore additional people were to be educated. The Planning Commission in its approach paper to the Ninth Plan stated, keeping in view the declaration of education as a fundamental right, that making the nation fully literate by the year 2005 will be the committed goal.

The Hon. Prime Minister had put forward a suggestion that every student should impart literacy to five persons, including two girls to be able to qualify for the senior school certificates at the end of the plus-two course.



Seat No.	
-------------	--

**B.Sc. – III (Semester – VI) (Entrepreneurship) Examination, 2017
(New – CGPA Pattern)
INTERNATIONAL BUSINESS**

Time : 2½ Hours

Max. Marks : 70

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

1. Multiple choice questions :

14

1) Advantages of international business are

- A) High Living Standard B) Wider Market
C) Large Scale Economy D) All the above

2) The member countries of the NAFTA includes USA, Canada and

- A) U.K. B) Brazil
C) Argentina D) Mexico

3) Formal trade barriers like tariffs and quotas are lowest in

- A) Japan B) India
C) China D) USA

4) Which of the following is a part of capital account ?

- A) Private capital B) Banking capital
C) Official capital D) All the above

5) The investment in productive assets and participation in management as stake holders in business enterprises is

- A) FDI B) FII
C) Balance of payment D) SDR



- 6) _____ consist of economic conditions, economic policies, industrial policies and economic system.
- A) Business Environment B) Economic Environment
C) Natural Environment D) None
- 7) IBRD (International Bank of Reconstruction and Development) also known as
- A) Exim Bank B) World Bank
C) International Monetary Fund D) International Fund
- 8) Orientation approach of multi domestic (Multinational Company) is
- A) Polycentric B) Ethnocentric
C) Mixed D) Geocentric
- 9) Absolute cost advance theory considered the trading by _____ countries.
- A) Two B) Three C) One D) Four
- 10) A balance payment is _____ only system of all economic transactions between the residents of country.
- A) Single B) Double
C) Multiple D) Mixed
- 11) The economic libration of _____ have given greater fillip to the foreign direct investment.
- A) 1992 B) 1947 C) 1991 D) 1990
- 12) E-business stands for
- A) Electronic business B) Electron business
C) Electric business D) All of the above
- 13) Key Assets of home country of multinational company are
- A) Centralized B) Decentralized
C) Core D) Mixed
- 14) Importer Exporter Code (IEC) no. should obtained from
- A) DGFT
B) Regional Licencing Authority
C) Export Import Council
D) None



2. Solve **any seven** of the following : **14**
- 1) Balance of Payment.
 - 2) Causes of disequilibrium.
 - 3) Capital Account.
 - 4) Comparative cost theory.
 - 5) Voluntary Export Restraints.
 - 6) Multinational company.
 - 7) Shipment.
 - 8) Trends in FDI.
 - 9) Human resource model of SAP/3.
3. A) Attempt **any two** of the following : **10**
- 1) Globalization in India.
 - 2) Concept, Advantages and disadvantages of MNCs SAARC.
 - 3) What is Regional and economical Integration ? Explain with example.
- B) Export procedures. **4**
4. Attempt **any two** of the following : **14**
- 1) What are the different stages of Globalization ?
 - 2) What is franchising ? What are the advantages and disadvantages of franchising ?
 - 3) Explain the tariffs, subsidies, quotas.
5. Attempt **any two** of the following : **14**
- 1) What is NAFTA ?
 - 2) Give in brief the factors contributed for the growth of MNCs.
 - 3) What is Sap consultant ?
-



Seat No.	
-------------	--

**B.Sc. – III (Semester – VI) (Entrepreneurship) Examination, 2017
(New – CGPA Pattern)
ORGANISATIONAL BEHAVIOUR**

Time : 2.30 Hours

Max. Marks : 70

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

1. Multiple choice questions.

14

- 1) _____ is the outcome of certain external and internal forces.
 - a) Human growth
 - b) Human behaviour
 - c) Biological progress
 - d) None of these
- 2) Personality reflects in one's
 - a) Appearance
 - b) Temperament
 - c) Behaviour
 - d) Leadership
- 3) In an organisation, good performances can be encouraged by giving rewards. Rewards must be proportionate to
 - a) Behaviour patterns
 - b) Quick learning
 - c) Employee's inputs
 - d) Manager's choice
- 4) With modern therapy and self observation, it is possible to
 - a) Eliminate stress
 - b) Reduce stress
 - c) Avoid stress
 - d) Manage stress
- 5) _____ is one of the great motivators of the 21st century.
 - a) Eckhart Tolle
 - b) Paul J. Meyer
 - c) Stacy J. Adams
 - d) Deepak Chopra
- 6) Basic types of conflicts are
 - a) Intrapersonal
 - b) Interpersonal
 - c) International
 - d) a and b above



2. Solve **any seven** of the following : **14**
- 1) Expectancy Theory.
 - 2) Steps online electronic cash.
 - 3) What is stress ?
 - 4) Define ethics of power and politics.
 - 5) Time management.
 - 6) Individual process.
 - 7) Types of learning organisation.
 - 8) Why do people join group ?
 - 9) Meaning and definitions of perceptions.
3. A) Short note (**any 2**) : **10**
- 1) Types of personality
 - 2) Natures of group
 - 3) Importance of motivation.
- B) Process of internet monetary payment security requirements. **4**
4. Attempt **any two** of the following : **14**
- 1) Theories of motivations
 - 2) Determinants of group behaviour
 - 3) Nature and types of personality.
5. Attempt **any two** of the following : **14**
- 1) Payment and purchase order process.
 - 2) Theories of personality.
 - 3) Types of political activity.
-



vii) Anodizing is the process which gives the coating of oxide film on the surface of _____ and its alloys.

- a) Al b) Pb c) Zn d) Sn

viii) Zeolites are _____ substance.

- a) Crystalline b) Amorphous
c) Either a and b d) Neither a nor b

ix) In any chromatographic technique the number of phases involved in separation is _____

- a) 0 b) 1 c) 2 d) 4

x) Due to presence of Ca^+ and Mg^{+2} ions water is _____

- a) Hard b) Soft
c) Normal d) None of these

xi) Halon-1301 is also known as _____

- a) Bromotrifluoromethane b) Bromodifluoromethane
c) Bromotetrafluoromethane d) None of these

xii) _____ centers increases catalytic activity of zeolites.

- a) Basic b) Acidic
c) Neutral d) None of these

xiii) Current density expressed in _____

- a) Sq.ft. b) A/dm^2 c) Sq.cm d) None of these

xiv) _____ is an example of type A fire.

- a) Oil b) Wood c) Cloths d) Paper

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

14

- i) Give the Faradays law of electrolysis.
- ii) How will you prepare benzoic acid from toluene ?
- iii) Name the different types of fires.
- iv) What is principle of chromatography ?



- v) Give the advantages of paper chromatography.
- vi) What is cathode and anode efficiency ?
- vii) How Rf value can be calculated ?
- viii) Write the two application of gas chromatography.
- ix) What is meant by zeolite ?

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

- i) Anodising.
- ii) Chromium plating.
- iii) Friedel craft acylation reaction.

B) Discuss thin layer chromatography. **4**

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

- i) Describe all the detail is involved in the electroplating of nickel.
- ii) What is paper chromatography ? Discuss in details experimental procedure of paper chromatography.
- iii) What are the biocatalysts ? Write the advantages and disadvantages of biocatalyst.

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

- i) Give base estimation of water and water base extinguishers.
 - ii) Discuss the basic principles of electroplating.
 - iii) Give the twelve principles of green chemistry.
-



- v) The study of all the proteins on genome of an organisms using computer is called as _____
- a) Genomics
b) Proteomics
c) Bioinformatics
d) Bioremediation
- vi) Introduction of foreign gene for improving genotype is called as _____
- a) Tissue culture
b) Vernalisation
c) Genetic engineering
d) Eugenics
- vii) Genetic engineering is used in _____
- a) Gene therapy
b) Vaccine production
c) Transgenic plants
d) All a, b and c
- viii) The term humulin is used for _____
- a) Hydrolytic enzyme
b) Human insulin
c) Isoenzyme
d) Antibiotic
- ix) Genetic engineering is _____
- a) Plastic surgery
b) Artificial framing of genome
c) Study of extranuclear gene
d) None of these
- x) _____ is used in genetic engineering as Molecular Scissors.
- a) DNA polymerase
b) DNA ligase
c) Restriction endonucleases
d) Helicase
- xi) _____ is used to join segment of DNA during genetic engineering.
- a) Lipase
b) Ligase
c) Gyrase
d) Helicase
- xii) Restriction Endonucleases are acts on _____
- a) Any fragment of DNA
b) (+) fragment DNA
c) (-) fragment of DNA
d) Within the strand of DS DNA
- xiii) _____ are acts as genetic vector.
- a) Plasmid
b) Bacteriophage
c) Cosmid
d) All a, b and c
- xiv) Plasmids are present in _____
- a) Viruses
b) Chromosomes
c) Bacteria
d) Chloroplast



2. Answer **any seven** of the following : 14
- i) Define Plasmid.
 - ii) Define Genetic Engineering.
 - iii) Enlist types of Vectors.
 - iv) Applications of PCR.
 - v) Types of PTC culture media.
 - vi) Transgenic plants.
 - vii) Ligase.
 - viii) cDNA Library.
 - ix) Synchronization.
3. A) Answer **any two** of the following : 10
- i) Describe in brief Western blotting.
 - ii) Discuss in detail Anther and Pollen Culture.
 - iii) Describe in detail History and Ethical issues of Genetic Engineering.
- B) Give a detailed account on PCR. 4
4. Answer **any two** of the following : 14
- i) Describe in detail Micro Propagation.
 - ii) Define vector and explain in detail types of vectors.
 - iii) Explain in detail Organ Cultures.
5. Answer **any two** of the following : 14
- i) Write in detail Callus Culture.
 - ii) Discuss in detail PAGE.
 - iii) Describe in detail Role of Enzymes in Gene Cloning.
-