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**B.Sc. – I (Semester – I) (Entrepreneurship) (CGPA) Examination, 2016
ENGLISH COMPULSORY**

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

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 : **14**

- 1) The name of the policeman on the beat was _____
 - a) Jimmy Wells
 - b) Jimmy Porter
 - c) Jimmy Wel
 - d) Jimmy Pals
- 2) Twenty years ago, Jimmy and Bob dined at _____
 - a) Big John Brady's Restaurant
 - b) Big Boss Restaurant
 - c) Big Joe Brady's Restaurant
 - d) Big John Brandy's Restaurant
- 3) The writer and Miss Krishna _____
 - a) Were at school together
 - b) Met at an exhibition
 - c) Met at a tea party
 - d) Were neighbours
- 4) From what she tells the writer, it is clear that Miss Krishna's life with her mother was _____
 - a) Miserable
 - b) Comfortable
 - c) Very happy
 - d) Difficult
- 5) According to Binet, a psychologist who developed the _____ test.
 - a) G. K.
 - b) I. Q.
 - c) S. T. S.
 - d) S. T. I.



- 6) The word 'intelligence' is derived from the Latin word _____
- | | |
|-----------------|----------------------|
| a) intellegere | b) intellect |
| c) intellectual | d) none of the above |
- 7) What does 'shining loads' mean ?
- | |
|---------------------------------|
| a) an unmarried woman's wrist |
| b) bunches of bangles |
| c) the flame of a marriage fire |
| d) sunlit corn |
- 8) Where are the bangle sellers carrying their wares ?
- | |
|-----------------------------------|
| a) To a married woman's house |
| b) To the house of a maiden woman |
| c) To a temple fair |
| d) To the streets |
- 9) An Irish Airman Foresees His Death is written by _____
- | | |
|----------------|-------------------|
| a) W. B. Yeats | b) W. B. Keats |
| c) John Henry | d) Sarojini Naidu |
- 10) The Speaker in the poem 'An Irish Airman Foresees His Death' belongs to _____
- | | |
|----------------|------------|
| a) Switzerland | b) Ireland |
| c) Newzealand | d) England |
- 11) Salma is a _____ noun.
- | | |
|---------------|----------------------|
| a) Proper | b) Common |
| c) Collective | d) None of the above |
- 12) They are happy to see her dancing. The underlined word is _____
- | | |
|-----------------|-----------------|
| a) Nouns | b) Pronouns |
| c) Prepositions | d) Conjunctions |
- 13) Prema is fond _____ dancing.
- | | |
|-------|-------|
| a) of | b) to |
| c) on | d) by |
- 14) Anu is _____ Sania Mirza of our college.
- | | |
|-------|---------------|
| a) a | b) the |
| c) an | d) no article |



2. Answer **any seven** of the following questions in **two** or **three** sentences **each** : **14**
- 1) What sort of relationship did Bob and Jimmy Share ?
 - 2) Why does Jimmy send another policeman to arrest Bob ?
 - 3) What is the meaning of the title 'Connoisseur' ?
 - 4) Why did the narrator consider Miss Krishna an annoying guest ?
 - 5) What are the many facets of intelligence ?
 - 6) What are the merits of artificial intelligence ?
 - 7) Which are the preferred colours for the bangles of a newly married woman ?
 - 8) Who is the Speaker in the poem 'An Irish Airman Foresees His Death' ?
3. A) Write short paragraphs on **any two** of the following : **8**
- 1) My family.
 - 2) Solar energy.
 - 3) My favourite book.
- B) Answer **any three** of the following questions briefly : **6**
- 1) What is the central idea of the poem 'Bangle Sellers' ?
 - 2) What is the Irish airman's attitude towards the war he is fighting in ?
 - 3) What are the myths regarding the intelligence of computers ?
 - 4) What do you understand of Miss Krishna's childhood from the story ?
4. Write an essay on **any one** of the following topics. **14**
- 1) The role of women in the modern society.
 - 2) The benefits and drawbacks of mobile phones on the lives of young people in the present day.
5. Read the following passage carefully and make a note of it. **14**
- Everyone knows that taxation is necessary in a modern state : without it, it would not be possible to pay the soldiers and policemen who protect us ; nor the workers in government offices who look after our health, our food, our water and all other things that we cannot do for ourselves; nor also the ministers and members of parliament who govern the country for us. By means of taxation, we pay for things that we need just as much as we need somewhere to live and something to eat.



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

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

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



Seat No.	
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**B.Sc. – I (Semester – I) (CGPA Pattern) Examination, 2016
ENTREPRENEURSHIP (Paper – I)**

Day and Date : Wednesday, 23-3-2016
Time : 10.30 a.m. to 1.00 p.m.

Max. Marks : 70

- N.B. :** 1) **All questions are compulsory.**
2) Draw figure where it is **necessary.**
3) Figures to the **right** indicate **full marks.**

SECTION – I
(Entrepreneurship and the World of Business)

1. 1) The term entrepreneur was first used in _____ language. **5**
a) French b) Greek c) American d) Latin
- 2) Adverse and _____ financial conditions can motivate an individual to set up a new venture.
a) Favourable b) Supportive
c) High d) None of these
- 3) Features of entrepreneurship is _____
a) Economic Activity b) Creative Activity
c) Innovative Activity d) All of these
- 4) _____ entrepreneur is characterized by great caution and scepticism in practicing any change.
a) Innovating b) Fabian
c) Imitative d) None of these
- 5) The term motivation has derived from the word _____
a) Motivate b) Motives c) Motive d) Motivational
2. Answer **any five** of the following : **10**
a) Explain the characteristics of an entrepreneur.
b) Problems faced by woman entrepreneurs.
c) Types of entrepreneur.



- d) Sole trader.
 - e) Define entrepreneurship.
 - f) Explain aid to commerce.
 - g) Importance of business ethics.
3. A) Write short notes on (**any 2**) : **10**
- 1) Entrepreneur v/s entrepreneurship.
 - 2) Partnership business organisation.
 - 3) Scope of business ethics.
- B) Solve **any one** of the following : **10**
- 1) Define 'Entrepreneurship – as a process'.
 - 2) Types of business organization.

SECTION – II

(Economics for Manager and Managerial Accounting)

1. Choose correct answers from the given alternatives : **5**
- 1) The work of book-keeping is a _____ nature.
 - a) Competitive b) Primary basic
 - c) Secondary d) None of these
 - 2) Bank A/c is _____ type of account.
 - a) Personal b) Real
 - c) Nominal d) Impersonal
 - 3) Economic problem arises in _____
 - a) Planned economies b) Free market economies
 - c) Mixed economies d) All of the above
 - 4) Money value of the reputation of business is known as _____
 - a) Copyright b) Goodwill
 - c) Patents d) Trademark
 - 5) Firms owned by two or more individuals is known as _____
 - a) Proprietorship b) Partnership
 - c) Corporations d) None of the above



2. Answer the following questions (**any 5**) : **10**

- 1) Meaning and definitions of managerial economics.
- 2) What is meant by individual demand and market demand ?
- 3) Determinants of demand.
- 4) What is meant by trial balance ?
- 5) What is production function ?
- 6) The law to demand.

3. A) Write short note (**any 2**) : **10**

- 1) What is meant by market structure ?
- 2) What is accounting ? Explain in classification of accounts.
- 3) Scope of managerial economics.

B) Write brief question (**any 1**) : **10**

- 1) What do you mean by demand analysis ? State the explain in determinants of demand and types of demand.
- 2) Journalise following transaction in the book of Mr. Rohit Shah.

Sr. No.	Particulars	Rs.
1)	Mr. Rohit Shah started business with cash	10,000
2)	Purchased goods for cash	1,500
3)	Deposited into Bank of Maharashtra	1,000
4)	Sold goods to Rakesh	500
5)	Paid rent	200
6)	Received dividend	550
7)	Paid for repairs	150
8)	Paid wages to Rane	200
9)	Purchases furniture for cash	1,200
10)	Received commission	1,000



SLR-Y – 3

Seat No.	
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**B.Sc. I (Semester – I) Examination, 2016
(CGPA Pattern)
ENTREPRENEURSHIP
Industrial Chemistry (Paper – I)**

Day and Date : Saturday, 26-3-2016

Max. Marks : 70

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

- Instructions :** 1) **All questions are compulsory.**
2) Draw neat labelled diagram **wherever** necessary.
3) Figures to the **right** indicate **full** marks.
4) Atomic weights : H = 1, C = 12, O = 16, Cl = 35.5, Br = 80, Ag = 108, S = 32, Ba = 137, Pt = 195.

SECTION – I
(Fundamentals of Inorganic Chemistry)

1. Select the correct alternative for the following and rewrite the sentences : 5
- 1) In BeCl_2 bond angle is _____
a) 90° b) 180° c) 72° d) 120°
 - 2) Bond order of N_2 is _____
a) 3 b) 2 c) 1.5 d) 1
 - 3) Sodium chloride is _____ structure.
a) FCC b) BCC
c) Hexagonal d) Tetrahedral
 - 4) BOD or COD is expressed in _____
a) g/L b) g/dm^3 c) Kg/L d) mg/dm^3
 - 5) Particulate causing air pollution _____
a) SO_x
b) Organic acids
c) Dust, fume, mist, spray etc.
d) Inorganic gases

P.T.O.



2. Solve **any five** of the following : 10
- 1) Define the terms
 - a) Ionic bond
 - b) Hydrogen bond
 - 2) Give the comparison between molecular orbital and atomic orbital.
 - 3) Draw the orbital diagram of BF_3 .
 - 4) Explain the formation of Be_2 molecule on the basis of MOT.
 - 5) Define the terms.
 - a) Biological Oxygen Demand (BOD)
 - b) Chemical Oxygen Demand (COD)
 - 6) What are the types of air pollution ?
 - 7) What is meant by acid rain ? Explain in brief.

3. A) Solve **any two** of the following : 10
- 1) On the basis of VSEPR theory explain formation of H_2O molecule.
 - 2) Predict bond order, stability and magnetic character of N_2 molecule on the basis of MOT.
 - 3) Discuss the principle of Born-Haber cycle. Give only a schematic representation of Born-Haber cycle of alkali metal halide.
- B) Answer **any one** of the following : 10
- 1) Define hardness and alkalinity. Explain in brief determination of total hardness and total alkalinity of water.
 - 2) Discuss the characteristic properties of the ionic compounds.

SECTION – II
(Fundamentals of Organic Chemistry)

1. Select the most correct alternative for each of the following : 5
- 1) The hybridization of carbon involved in acetylene is _____
 - a) sp^3
 - b) sp^2
 - c) sp
 - d) none of these
 - 2) In nitration reaction of benzene _____ acts as an electrophile.
 - a) NO_2^-
 - b) NO_2^+
 - c) NO_3^-
 - d) HNO_3
 - 3) Carbon and Hydrogen in an organic compound are estimated by _____
 - a) Combustion
 - b) Carius
 - c) Titration
 - d) None of these



4) The drugs used to control blood sugar are _____ agents.

- a) antipyretics
- b) anti-inflammatory
- c) antimalarial
- d) antidiabetic

5) _____ is an auxochrome.

- a) N = N
- b) C = C
- c) C = O
- d) -NH₂

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

10

- i) Explain Kolbe reaction for the formation of alkanes.
- ii) Write Friedel Craft's alkylatin reaction of benzene. Which electrophile is involved in this reaction ?
- iii) Explain the principle of estimation of nitrogen by Kjeldahl's method.
- iv) What are the qualities of good dye ?
- v) Explain the terms : a) anesthetics b) analgesics
- vi) Write a short note on ozonolysis of alkenes.
- vii) Define a) empirical formula b) molecular formula.

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

10

- i) Mechanism of sulphonation of benzene.
- ii) Classification of drugs based on therapeutical action.
- iii) Witt's Theory of Colour and Constitution.

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

10

- i) How are nitrogen and halogens in an organic compound detected ? Explain the reactions with equations.
 5.15×10^{-4} Kg of an organic compound gave 6.3×10^{-4} Kg of barium sulphate in Carius method.
Calculate the percentage of sulphur in the compound.
 - ii) What are Dienes ? Give the classification of dienes with an example of each. Give the two methods of preparation of butadiene.
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SLR-Y – 4

Seat No.	
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B.Sc. I (Entrepreneurship) (Semester – I) (CGPA) Examination, 2016
INDUSTRIAL MICROBIOLOGY – I
Fundamentals of Microbiology and Basic Techniques in Microbiology

Day and Date : Monday, 28-3-2016
Time : 10.30 a.m. to 1.00 p.m.

Max. Marks : 70

- N.B. :** 1) **All** questions are **compulsory**.
2) Draw a **neat** labelled diagram **wherever** necessary.
3) Figures to the **right** indicate **full** marks.
4) Answers to the **both** Sections should be written in **same** answerbook.

SECTION – I

(Fundamentals of Microbiology)

1. Rewrite the sentences by selecting correct answers from given alternatives. 5
- 1) _____ are prokaryotic organisms.
a) Fungi b) Bacteria c) Algae d) Viruses
 - 2) _____ is a collection of similar species.
a) Family b) Class c) Genus d) Strain
 - 3) Gram positive bacterial cell wall contains _____ % of peptidoglycan.
a) 40 – 90 % b) 10 % c) 5 d) 2
 - 4) U.V. radiation at _____ wavelength has highest microbicidal activity.
a) 10 nm b) 20 nm c) 265 nm d) 15 nm
 - 5) _____ is extrenal structure to the cell wall of bacteria.
a) Ribosome b) Chromosome
c) Mitochondria d) Flagella

P.T.O.



2. Answer **any five** of the following : 10
- 1) Define the term 'Growth'.
 - 2) What is the composition of capsule ?
 - 3) Define the term 'Medical Microbiology'.
 - 4) What is Turbidostat ?
 - 5) Draw a neat labelled diagram of plasma membrane.
 - 6) Write mode of action of Iodine.
 - 7) Define the term classification.
3. A) Write short notes on **any two** of the following : 10
- 1) Bacterial nomenclature.
 - 2) Cell wall of gram positive bacteria.
 - 3) Growth phases.
- B) Answer **any one** of the following : 10
- 1) Write distinguishing characteristics in between prokaryotic cell and eukaryotic cell.
 - 2) Explain in detail the sterilization by chemical agents.

SECTION – II

(Basic Techniques in Microbiology)

1. Rewrite the sentences by selecting correct answers from given alternatives. 5
- 1) _____ is the mordant used in gram staining.
a) Alcohol b) Gram's Iodine c) Safranin d) Basic fuchsin
 - 2) The resolving power of human eye is _____ mm.
a) 0.2 b) 0.002 c) 20 d) 25
 - 3) _____ culture is the culture that contains only one species of microorganism.
a) Live b) Mixed c) Dead d) Pure
 - 4) _____ is the acidic stain.
a) Basic fuchsin b) Safranin c) Congo Red d) Methylene Blue
 - 5) Nutrient agar is _____ media.
a) Synthetic b) Semi-synthetic
c) Natural d) Living



2. Answer **any five** of the following : **10**
- 1) What is magnification power ?
 - 2) Write about spread plate technique.
 - 3) Define the term 'stain'.
 - 4) Write the applications of monochrome staining.
 - 5) What is DMC ?
 - 6) Write the composition of MacConkey's agar media.
 - 7) Define the term 'mixed culture'.
3. a) Write short notes on **any two** of the following : **10**
- 1) Acid-Fast staining
 - 2) Standard plate count
 - 3) Streak plate method.
- b) Answer **any one** of the following : **10**
- 1) Explain in the detail 'Living media'.
 - 2) Explain with ray diagram, principle, working and applications of transmission electron microscope.
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SLR-Y – 5

Seat No.	
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B.Sc. – I (Semester – I) (Entrepreneurship) (CGPA) Examination, 2016
INDUSTRIAL BIOTECHNOLOGY (Paper – I)
Cell Biology and Animal and Plant Physiology

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

Max. Marks : 70

- N.B. :** 1) **All questions are compulsory.**
2) Draw a **neat** labelled diagram **wherever** necessary.
3) Figures to the **right** indicates **full** marks.
4) Answer of **both** the Sections should be written in **same** answer book.

SECTION – I
(Cell Biology)

1. Rewrite the sentences by choosing correct answers from given alternatives : **5**
- 1) The motility of the cell is due to _____
A) cell wall
B) cell membrane
C) Flagella
D) Pies
- 2) The protein synthesis in eukaryotes occurs in _____
A) SER
B) RER
C) Cytoplasm
D) Lysosome
- 3) Chiasmata formation occurs in _____ phase.
A) Zygotene
B) Pachytene
C) Diakinesis
D) Telophase
- 4) The backbone of DNA strands is made from alternating _____ and _____ residues.
A) Phosphate, sugar
B) Teichoic acid sugar
C) Sugar, Nitrogenous base
D) None of the above

P.T.O.



5) _____ is characteristics component of cell wall of gram negative bacterial cell wall.

A) Peptidoglycan

B) Teichoic acid

C) LPS

D) All of above

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

10

i) Define phagocytosis.

ii) What is cell senescence ?

iii) What is simple diffusion ?

iv) What is heterochromatine ?

v) Draw and label ultrastructure of mitochondria.

vi) Give characteristics of BGA.

vii) Define metaphase and telophase.

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

10

i) Describe in detail fluid mosaic model of cell membrane.

ii) Give detailed account on cell wall of gram positive bacteria.

iii) Give a detailed account on ultrastructure of eukaryotic cell.

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

10

i) Describe in detail chemical nature and structure of Watson Crick model of DNA.

ii) Define mitosis. Describe in detail stages of mitosis.

SECTION – II
(Animal and Plant Physiology)

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

5

1) _____ is water soluble vitamin.

A) Vit. A

B) Vit. B

C) Vit. C

D) Vit. D



- 2) _____ hormone secreted by endocrine gland of pancreas.
A) Insulin B) Thyroxine C) Estrogen D) Cholecalciferol
- 3) RUBISCO enzyme fix atmospheric CO_2 in _____ pathway.
A) C_2 B) C_4 C) C_3 D) CAM
- 4) Nervous tissue is composed of _____
A) Neurons B) Nerve cells
C) Neuroglial cells D) All of above
- 5) Detoxification of toxic material carried by _____
A) Lung B) Liver
C) Heart D) Pancreas

2. Answer **any five** of the following : 10
- i) Enlist functions of saliva.
 - ii) Draw a well labelled diagram of tooth.
 - iii) Enlist the types of photosynthesis pigment.
 - iv) Define histology.
 - v) Distinguish between ciliated and glandular epithelium.
 - vi) Define plant tissue culture.
 - vii) Enlist hormones secreted by pancreas.

3. A) Answer **any two** of the following : 10
- i) Describe in detail structure and function of skin.
 - ii) Give a detailed account on calvin cycle.
 - iii) Define tissue. Enlist the characteristics of epithelial and cardiac tissue.

- B) Answer **any one** of the following : 10
- i) Write a essay on basic elements required for growth of cell.
 - ii) Define photosynthesis. Explain in detail C_4 pathway.
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Seat No.	
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**B.Sc. – I (Entrepreneurship) (Semester – II) (CGPA Pattern)
Examination, 2016
ENGLISH COMPULSORY
On Track : English Skills for Success**

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

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 correct alternative given below **each :**

14

- 1) The Parliament of Religions was to be held in _____
 - a) America
 - b) Singapore
 - c) Canada
 - d) South Africa
- 2) _____ is not passed by Swami Vivekananda travelling to America.
 - a) Ceylon
 - b) Singapore
 - c) Penang
 - d) Australia
- 3) Jain was represented by _____
 - a) Vivekananda
 - b) Chakravarthi
 - c) Gandhi
 - d) Annie Besant
- 4) 'The world's most dangerous animal.' Inside the cage there is no animal but a _____
 - a) Nothing
 - b) Man
 - c) Mirror
 - d) None
- 5) The main reason of the serious economics problems of the majority is _____
 - a) Famine
 - b) Negligence
 - c) Ignorance
 - d) All
- 6) Wernher Von Braun was _____ scientist who produced Jupiter missile.
 - a) an American
 - b) a Russian
 - c) a Roman
 - d) a German



- 7) Brahma is a _____ Deity.
a) Hindu b) German c) American d) Japanese
- 8) The poem 'Full Moon' is written by _____
a) Kamala Das b) Robert Hayden
c) Nani Palkhivala d) Toru Dutta
- 9) Today the moon is merely an attraction for _____
a) the poets b) the children
c) the scientists d) the lovers
- 10) Keats takes apostrophe _____
a) Keats' b) Keat's c) Keats's d) All
- 11) She took _____ laptop. (belong to Gita)
a) Gitas' b) Gita's c) Both d) None
- 12) Pune is _____ to my village than Nagpur.
a) big b) bigger c) biggest d) all
- 13) Die and dye are the examples of _____
a) Homonyms b) Homophones
c) Homographs d) Synonym
- 14) _____ is the antonym of literate.
a) Illiterate b) Semiliterate
c) Aliterate d) Hyperliterate

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

14

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



6) Who were the Indians to represent various religions ?

7) Who wrote 'Brahma' ?

8) Which poem refers the garden of Gethsemane ?

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

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

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

3) Describe the appearance of Swami Vivekananda.

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

1) What is an agenda ?

2) What is CC ?

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

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

OR

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

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



SLR-Y – 7

Seat No.	
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**B.Sc. I (Semester – II) (CGPA) Examination, 2016
ENTREPRENEURSHIP (Paper – II)**

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

Max. Marks : 70

- Instructions :** 1) **All questions are compulsory.**
2) **Figures to the right indicate full marks.**
3) **Draw figure where it is necessary.**

SECTION – I

35

(Principles of Marketing & Management Accounting)

1. Rewrite the following sentences by selecting correct answer from the given alternatives.

5

- 1) In _____ approach the capital structure decision is relevant to the valuation of the firm.
- a) Net income
b) Net operating income
c) Traditional
d) None of the above
- 2) I.T.R. stands for
- a) Inventory Turnover Ratio
b) Interest Turnover Ratio
c) International Turnover Ratio
d) Income Turnover Ratio
- 3) It is the job of _____ to produce insight into the customer's attitude and buying behaviour.
- a) Marketing research
b) Marketing planner
c) Marketing personnel
d) None of the above
- 4) _____ refers to the amount invested in various components of current assets.
- a) Temporary working capital
b) Networking capital
c) Gross working capital
d) Permanent working capital

P.T.O.



5) The primary data which is gathered by observing relevant actions and people is called

- a) Experimental research b) Ethnographic research
c) Observational research d) Survey research

2. Answer in short (**any 5**) : **10**

- 1) Entrepreneur Vs Entrepreneurship
- 2) Advantages of segmentation.
- 3) Scope of marketing.
- 4) Introduction to management accounting.
- 5) What is meant by ratio analysis ?
- 6) What is meant by business give one example ?

3. A) Describe of following (**any 2**) : **10**

- 1) Selling Vs Marketing.
- 2) Define Management Accounting. Explain in types of accounting.
- 3) Explain scope and limitation of marketing research. **10**

B) Answer in brief (**any 1**) :

- 1) Define Management Accounting. State and explain nature and scope of accounting.
- 2) Arrange the following statement for ratio analysis and compute Income Statement Ratios.

L & T Co. Ltd.

Dr.	Trading & Profit & Loss Account		Cr.
Particulars	Rs.	Particulars	Rs.
To opening stock	40,000	By sales	3,00,000
To purchases	1,00,000	By closing stock	50,000
To wages	30,000		
To gross profit	1,80,000		
Total	3,50,000	Total	3,50,000
To office and administration expenses	15,000	By gross profit	1,80,000
To financial expenses	5,000	By profit on sale of investment	5,000



To selling and distribution expenses	4,000		
To interest	7,000		
To provision for tax	15,000		
To loss on sale of furniture	10,000		
To net profit	1,29,000		
Total	1,85,000	Total	1,85,000

Calculate :

- 1) Prepare income statement ratio
- 2) Gross profit ratio
- 3) Net profit ratio
- 4) Operation profit ratio
- 5) Operating cost of ratio.

SECTION – II

35

(Cost Accounting & Project Management)

1. Chooses the correct alternative from the given alternatives : 5
- 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) 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
 - 3) 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
 - 4) 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
 - 5) Material is
 - a) Direct Expenses
 - b) Indirect expenses
 - c) Both a) and b)
 - d) None of these



2. Answer the following questions (**any 5**) : **10**
- 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.

3. A) Write short notes on (**any 2**) : **10**
- 1) Difference between management accounting and cost accounting.
 - 2) Features and advantage of job cost sheet.
 - 3) Define project selection process.

- B) Discuss in brief (**any 1**) : **10**
- 1) What do you mean by project management ? Explain the significance and steps of project report.
 - 2) Prepare a statement showing the cost of production and goods sold for the period 1-1-2009 to 31-1-2009.

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. (01-1-2009)	10,00,000
W.I.P. (31-1-2009)	20,00,000
Closing stock of raw material on (31-1-2009)	30,00,000
Closing stock of finished goods on (1-1-2009)	80,00,000
Closing stock of finished goods on (31-1-2009)	70,00,000
Selling and distribution overheads	10,00,000
Administrative overheads	25,00,000
Sales	10,00,00,000

Prepare :

- a) Cost of material consumed
 - b) Prime cost
 - c) Factory cost
 - d) Cost of goods sold
 - e) Total cost.
-



Seat No.	
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B.Sc. (Part – I) (Semester – II) (CGPA Pattern) Examination, 2016
ENTREPRENEURSHIP
Industrial Chemistry (Paper – II)

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

Total Marks : 70

- Instructions:** 1) **All questions are compulsory.**
2) Draw **neat** diagrams and give equations **wherever necessary.**
3) Figures to the **right** indicate **full marks.**
4) **Use of log table and scientific calculator is allowed.**
(At. Wts. H = 1, C = 12, O = 16, N = 14, Na = 23, Cl = 35.5).

SECTION – I
(Fundamentals of Physical Chemistry)

1. Choose the most correct alternative for each of the following. 5
- 1) Photochemical union of H_2 and Cl_2 is an example of _____ order reaction.
a) first b) second c) third d) zero
 - 2) Van der Waals equation explains the behaviour of _____
a) mixture of gases b) real gas
c) ideal gas d) none of these
 - 3) The unit of viscosity is _____
a) poise b) newton c) dyne d) pascal
 - 4) The number of moles of solute in one liter of solution is called as _____
a) molarity b) molality
c) mole fraction d) normality
 - 5) The number of molecules whose concentration determines the rate of the reaction is _____
a) molecularity b) order c) velocity d) rate



2. Answer **any five** of the following : 10
- i) Define :
 - a) mole
 - b) normality.
 - ii) What do you mean by molecularity of a reaction ?
 - iii) State Joule-Thomson effect.
 - iv) Mention different methods of determination of concentrations.
 - v) Define coefficient of viscosity.
 - vi) Give the expression for Van der Waals equation. Mention the terms involved in it.
 - vii) Give one example of second order reaction.
3. A) Write short notes on **any two** : 10
- i) Drop-weight method for the determination of surface tension.
 - ii) Andrew's isotherms.
 - iii) Any two characteristics of first order reaction.
- B) Answer **any one** of the following : 10
- i) Derive an expression for second order reaction with equal concentration. Give its graphical representation.
 - ii) What is viscosity ? Discuss Ostwald's method for determination of viscosity.

SECTION – II
(Fundamentals of Analytical Chemistry)

4. Select the most correct alternative for the following and rewrite the sentence. 5
- i) Refining of petroleum yields _____ fractions.
a) one b) four c) three d) five
 - ii) The polymer which soften on heating and harden on cooling is known as _____ polymer.
a) thermoplastic b) thermosetting
c) elastomeric d) fibres
 - iii) Reversible processes are _____
a) real b) natural c) unnatural d) all of these



- iv) 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
- v) The percentage of fat in the buffalo milk is _____
a) 4.6 b) 4.5 c) 6.6 d) 3.6

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

- i) What is octane number and flash point ?
- ii) Define the term enthalpy.
- iii) Give Kirchhoff's equation.
- iv) What are the calorific value and heating value ?
- v) State Joule Thompson effect.
- vi) Give the applications of fire point.
- vii) State Hess' law.

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

- i) Carnot theorem
- ii) Cracking of fuel
- iii) Second law of thermodynamics.

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

- i) What are the polymers ? Discuss the various types of polymers with suitable examples.
 - ii) Define the term antacid. Explain their types. Comment on role of aluminium hydroxide gel and magnesium hydroxide as antacid.
-



SLR-Y – 9

Seat No.	
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**B.Sc. – I (Semester – II) Entrepreneurship (CGPA Pattern)
Examination, 2016
INDUSTRIAL MICROBIOLOGY (Paper – II)**

Day and Date : Monday, 4-4-2016

Max. Marks : 70

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

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

SECTION – I
(Fundamentals of Microbiology)

1. Rewrite the following sentences by selecting correct answers from given alternatives :

5

- i) _____ is waste material of paper and pulp industry.
a) SWL b) Molasses c) Whey d) CSC
- ii) _____ is used for selection of industrially important micro-organisms.
a) Assay b) Screening
c) Strain improvement d) Filtration
- iii) Lyophilization is used for _____ of cultures.
a) Preservation b) Cultivation
c) Incubation d) Distraction
- iv) Pilot plant study is carried out in fermenters having capacity _____ liters.
a) 500 – 1000 b) 2 – 5 c) 10 – 20 d) 30 – 50
- v) _____ is used for screening of organic acid producing microorganisms.
a) Indicator plate technique b) Serial dilution technique
c) Crowded plate technique d) Diffusion technique

P.T.O.



2. Answer **any five** of the following : 10
- i) Define precursors.
 - ii) Define lyophilization.
 - iii) What is corn strep liquor ?
 - iv) What is sterilization ?
 - v) What is secondary screening ?
 - vi) What is overlaying cultures method ?
 - vii) Define fermentation.
3. A) Write short notes on **any two** of the following : 10
- i) Describe the role of buffers in fermentation.
 - ii) Describe in detail alternative sources used in preparation of fermentation media.
 - iii) Explain briefly factors affecting fermentation process.
- B) Answer **any one** of the following : 10
- i) Describe in detail different methods employed in preservation and maintenance of industrially important microorganisms.
 - ii) Describe in detail raw materials used in fermentation media.

SECTION – II
(Basic Techniques in Microbiology)

1. Rewrite the following sentences by selecting correct answers from given alternatives : 5
- i) _____ is used for strain improvement.
 - a) Assay
 - b) Screening
 - c) Gene manipulation
 - d) Scale up
 - ii) _____ is used for recovery of Alcohol.
 - a) Solvent extraction
 - b) Precipitation
 - c) Filtration
 - d) Distillation
 - iii) _____ media are used in turbidometric assay.
 - a) Semisolid
 - b) Liquid
 - c) Solid
 - d) Gas
 - iv) _____ is used as test organism for bioassay of penicillin.
 - a) S.aureus
 - b) E. Coli
 - c) Kleb. pneumoniae
 - d) Salmonella
 - v) _____ are used as vector in strain improvement by R-DNA technology.
 - a) Plants
 - b) T₄-phage
 - c) Plasmid
 - d) Cosmid



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

10

Define following terms :

- a) Microbial assay.
- b) Site directed mutagenesis.
- c) Solvent extraction.
- d) Scale up of fermentation.
- e) Test organism.
- f) Down stream processing
- g) Auxotrophs.

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

10

- i) Explain in brief strain improvement programme for industrially important microbes.
- ii) Briefly explain enzymatic assay.
- iii) Describe in detail scale up of fermentation.

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

10

- i) Write an essay on down stream processing.
 - ii) Write an essay on computer applications of fermentation industry.
-



Seat No.	
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**B.Sc. – I (Semester – II) (Entrepreneurship) (CGPA Pattern)
Examination, 2016
INDUSTRIAL BIOTECHNOLOGY (Paper – II)**

Day and Date : Tuesday, 5-4-2016
Time : 10.30 a.m. to 1.00 p.m.

Max. Marks : (35+35=70)

- N.B. :** 1) **All questions are compulsory.**
2) **Draw neat labelled diagram wherever necessary.**

**SECTION – I
(Basic Biomolecules)**

1. Rewrite the following sentences by choosing correct alternatives : 5
- 1) _____ is a storage polysaccharide.
A) Glucose B) Cholesterol C) Glycogen D) Peptidoglycan
- 2) _____ is a phospholipid not derived from glycerol but found in cell membrane.
A) Sphingosine B) Sphingomyelin
C) Cholesterol D) Cerebroside
- 3) α helix and β sheets are present in _____ structure of protein.
A) Secondary B) Primary C) Tertiary D) Quaternary
- 4) The inhibitor binds to enzyme-substrate complex called as _____ inhibition.
A) Competitive B) Feedback
C) Non-competitive D) Uncompetitive
- 5) Pellagra is the deficiency caused due to deficiency of _____ vitamins.
A) Riboflavin B) Niacin C) Biotin D) Thiamin



2. Write **any five** of the following : 10
- i) Define induced and constitutive enzyme.
 - ii) Enlist chemical classes of hormones.
 - iii) Peptide bond.
 - iv) Define disaccharide. Give two examples.
 - v) Enlist fat soluble vitamins with functions.
 - vi) Liposomes.
 - vii) Ramchandran plot diagram.

3. A) Write **any two** of the following : 10
- 1) Define polysaccharide. Describe in detail Homo and Heteropolysaccharide.
 - 2) Describe in detail methods of enzyme immobilization.
 - 3) Write a detailed account on lipids.

- B) Write **any one** of the following : 10
- 1) Describe in detail structural level classification of proteins.
 - 2) Describe in detail factors affecting on enzyme activity.

SECTION – II
(Basics of Metabolism)

1. Rewrite the following sentences by choosing correct alternatives : 5
- 1) _____ is synthesized during non-cyclic photophosphorylation.
a) ATP b) NADH_2 c) ADP d) Both a) and b)
 - 2) _____ proposed chemiosmotic theory.
a) Robert Brown b) Han's Krebs
c) Peter Mitchell d) Mendel
 - 3) By breakdown of ATP to ADP _____ amount of energy is released.
a) 7.3 kcal/mole. b) 10 kcal/mole.
c) 2.1 kcal/mole. d) 70 kcal/mole.



- 4) Kreb's cycle is also known as _____
a) TCA b) EMP c) HMP d) ATP
- 5) Conversion of glucose to two molecules of pyruvate is known as _____
a) Gluconeogenesis b) Glycogenesis
c) Glycolysis d) None of these

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

- 1) Explain the term anabolism and catabolism.
- 2) Explain uncoupling agents.
- 3) Explain the term photosystem.
- 4) Define Glycolysis and give its energetics.
- 5) What is Biotransformation ?
- 6) Give the classification of transporters.
- 7) Draw the structure of mitochondria.

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

- 1) Explain in detail Redox reaction.
- 2) Write an essay on Glyoxylate cycle.
- 3) Write in detail role of enzymes in biotransformation.

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

- 1) Write an essay on Krebs cycle.
 - 2) Explain in detail cyclic and non-cyclic photophosphorylation.
-



SLR-Y – 11

Seat No.	
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**B.Sc. – II (Entrepreneurship) (Semester – III) (CGPA) (New)
Examination, 2016**

Paper – III : PRINCIPLES OF BUSINESS MANAGEMENT AND BUSINESS ORGANIZATION

Day and Date : Wednesday, 6-4-2016
Time : 2.30 p.m. to 5.00 p.m.

Total Marks : 70

1. Choice and write a correct answer from given **four** alternatives. **14**
- 1) The father of scientific management was _____
 - a) F.E.L. Brach
 - b) Michal J. Jucious
 - c) F.W. Taylor
 - d) Peter F. Oruder
 - 2) Which component is not of planning ?
 - a) Policing
 - b) Procedures
 - c) Program
 - d) Results
 - 3) The elements which is not the part of Direction is _____
 - a) Supervision
 - b) Motivation
 - c) Leadership
 - d) Division of work
 - 4) Organization chart shows
 - a) The division of work only
 - b) The division of department only
 - c) The relationship between the superiors and subordinate
 - d) All the above
 - 5) _____ leadership style is most commonly found now-a-day.
 - a) Autocratic
 - b) Democratic
 - c) Free reign
 - d) Participate
 - 6) Motivation refers to _____
 - a) Coordinate the people
 - b) Guide the working people
 - c) Terrorize the people
 - d) Inducing people to work willing
 - 7) Communicating leadership is included in _____
 - a) Personal Competencies
 - b) Interpersonal Competencies
 - c) Business Management
 - d) Both a and c

P.T.O.



- 8) 'Sensitivity Training' is a function of _____
a) Planning b) Directing c) Leadership d) Staffing
- 9) The first thinker who classified the managerial function is
a) F.W. Taylor b) Henry Fayol c) G.E. Mayo d) Luther Gullik
- 10) 'SWOT' is used for _____
a) Planning b) Organizing c) Motivating d) Controlling
- 11) Management is an art and _____
a) Science b) Economic
c) Accountancy d) None of these
- 12) _____ is types of Organisation.
a) National Organization b) Hierarchical Organization
c) Group Organization d) Human Organization
- 13) A supervision has own status in organization _____
a) Top Management b) Middle Management
c) Front line Management d) Labour
- 14) The main objective of training is to _____
a) Develop knowledge and skill b) Provide information
c) Change the attitude d) All the above

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

14

- 1) What is meant by Management ?
- 2) Define Decision Making.
- 3) What do you mean by Business Planning ?
- 4) Define Organization.
- 5) Definition of control.
- 6) Write down function of Business Management.
- 7) Define Direction and Staffing.
- 8) Write down four name of scientist in Business Management.
- 9) Give objectives of Planning.



3. A) Attempt **any two** of the following. **10**
- 1) Explain the nature and importance of Business Management.
 - 2) Write down the function and qualities of Leader.
 - 3) What is meant by Planning ? Write down types of Planning.
- B) Write down types of Organization. **4**
4. Attempt **any two** of the following. **14**
- 1) Explain the types of planning and feature of planning.
 - 2) What is meant by Motivation ? Explain importance and theory of motivation.
 - 3) Explain the staff training and appraisal system.
5. Attempt **any two** of the following. **14**
- 1) Explain the major features of Management.
 - 2) What is meant by Organisation ? Explain the feature of Organization.
 - 3) Explain the importance, function and qualities of leader.
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Seat No.	
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**B.Sc. – II (Entrepreneurship) (Semester – III) (New CGPA) Examination, 2016
ADVANCED ACCOUNTANCY AND AUDITING (Paper – IV)**

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

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**

- 1) A statement showing financial position of a business is called as
 - a) Balance Sheet
 - b) Trial Balance
 - c) Trading A/c
 - d) Profit and Loss A/c
- 2) Voucher relates to
 - a) Cash Receipt
 - b) Cash Payment
 - c) Credit Transaction
 - d) All the above
- 3) Cash flow statement is also known as
 - a) Statement of changes of financial position on cash basis
 - b) Statement accounting for variation in cash
 - c) Both a and b
 - d) None of the above
- 4) Chartered Accountant Act was passed by the Indian Institute of chartered accountant in
 - a) 1949
 - b) 1932
 - c) 1880
 - d) 1945
- 5) The main object of auditing is detection and prevention of _____ in earlier days.
 - a) Vouching
 - b) Recording
 - c) Errors and frauds
 - d) None of above



- 6) Dividend received is transferred to credit side of
- a) Trading A/c
 - b) P & L A/c
 - c) Goodwill A/c
 - d) None of these
- 7) _____ arise when a transaction is wholly or partly omitted to be recorded.
- a) Errors of commission
 - b) Errors of omission
 - c) Errors of principle
 - d) Compensating errors
- 8) Amount irrecoverable from debtors is called as
- a) Discount
 - b) Reserve for doubtful debts
 - c) Bad debts
 - d) Gift to debtors
- 9) Which of the following are applications of funds ?
- a) Payment of dividend on share capital
 - b) Payment of tax
 - c) Increase in working capital
 - d) All of above
- 10) All indirect expenses are debited to _____ Account.
- a) Trading
 - b) P and L
 - c) Balance Sheet
 - d) Trial Balance
- 11) Which of the following are treated as long-term investment ?
- a) Non-current investments
 - b) Trade investments
 - c) Sinking fund investment
 - d) All of the above
- 12) A _____ is an Intangible Assets.
- a) Building
 - b) Furniture
 - c) Goodwill
 - d) Cash
- 13) Provision of taxation is treated as
- a) As a current liability
 - b) As an appropriation of profits
 - c) Both a and b
 - d) None of the above
- 14) Internal Auditor is appointed by
- a) The Management
 - b) The Shareholders
 - c) The Government
 - d) The statutory body



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

- 1) What is accounts classification ?
- 2) Objectives of auditing.
- 3) What is difference between internal audit and external audit ?
- 4) What do you mean by Insurance claims ?
- 5) What is meant by verification of Assets ?
- 6) Features of Profit and Loss Account.
- 7) What is working capital ?
- 8) Introduction to VAT.
- 9) Types of voucher and classes.

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

1) Complete the following table and comment

Particulars	X Ltd.	Y Ltd.	Z Ltd.
Current Assets	2,31,000	4,25,000	1,80,000
Current Liability	1,11,000	2,91,000	95,000
Working capital	?	?	?
Current ratio remark	?	?	?

2) Prepare Trial Balance from the following ledger of Shri Ganesh as on 31st March, 2010.

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, Purchases 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.

3) What is meant by verification ? State difference between verification and valuation.

B) Define Auditing. What are its advantages and disadvantages ? 4



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

14

1) From the following particulars prepare Trading A/c as on 31-3-2011

Particulars	Rs.
Opening stock	5,000
Purchases	22,000
Carriage inward	1,200
Freight	1,700
Return outward	2,000
Sales	51,700
Customs duty	2,000
Return Inward	700
Closing stock	5,300

2) What is meant by Auditing ? Explain in various types of Audit.

3) What is meant by VAT ? Explain in vouchers and transaction, types of voucher.

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

14

1) A fire occurred in business premises of M/s Ramesh and Company on 1st October 2002 from the following particulars ascertain the loss of stock and prepare a claim for insurance.

Particulars	Rs.
Stock on (1-1-2001)	23,800
Purchases from (1-1-2001 to 31-12-2001)	85,400
Sales from (1-1-2001 to 31-12-2001)	1,26,000
Stock on (31-12-2001)	21,000
Purchases from (1-1-2002 to 14-10-2002)	1,02,900
Sales from (1-1-2002 to 14-10-2002)	1,05,000

The stock salvaged was worth Rs. 12,200. The amount of policy was Rs. 44,100. There was an average clause in the policy.

2) State qualification and disqualifications of a company auditors.

3) What are the classification of Accounts and what are the Golden Rules of Accounting ?



Seat No.	
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B.Sc. – II (Entrepreneurship) (Semester– III) (New CGPA) Examination, 2016
MICROBIAL BIOTECHNOLOGY
Paper – III : Genetics

Day and Date : Tuesday, 12-4-2016

Max. Marks : 70

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

Instructions : 1) Draw a *neat* labelled diagram *wherever* necessary.
 2) **All** questions carry *equal* marks.
 3) Figures to the **right** indicate **full** marks.

1. Choose and write a correct answers from given alternatives : 14
- 1) The DNA in the chromatin is tightly associated with _____ protein.
- | | |
|-------------|-----------------|
| A) Albumine | B) Histone |
| C) Globulin | D) All of above |
- 2) Monohybrid test cross ratio is
- | | | | |
|----------|----------|----------|------------------|
| A) 3 : 1 | B) 2 : 1 | C) 1 : 1 | D) 9 : 3 : 3 : 1 |
|----------|----------|----------|------------------|
- 3) The normal human karyotype contains _____ chromosomes.
- | | |
|-------|-------|
| A) 47 | B) 46 |
| C) 45 | D) 48 |
- 4) The sequence of DNA which can insert at many sites in chromosome called _____ element.
- | | |
|--------------|-----------------|
| A) Insertion | B) Composite |
| C) Complex | D) All of above |
- 5) Klinefelter's syndrome is characterized by
- | |
|---------------------------------|
| A) Atleast one extra chromosome |
| B) One X chromosome less |
| C) One extra Y chromosome |
| D) One extra autosome |



- 6) 5 Bromo uracil is a base analogue of
A) Adenine
B) Guanine
C) Thymine
D) Cytosine
- 7) The process of conjugation discovered by _____ and _____.
A) Leaderberg, Tatum
B) Beadle, Tatum
C) Zinder, Leaderberg
D) Watson and Crick
- 8) Removal of one or more nucleotides from a gene called
A) Inversion
B) Insertion
C) Deletion
D) Duplication
- 9) Linked genes are
A) Immediately adjaice to one another on a chromosome
B) Have alleles which $\alpha\delta\sigma\theta$ independently
C) Never show crossing over
D) On same chromosome
- 10) _____ phage mediate specialized transduction
A) P22
B) T₄
C) λ
D) P₁
- 11) The mutation in which purines are replaced by another purine is called as _____ mutation.
A) Transition
B) Transversion
C) Missense
D) Nonsense
- 12) In Down's syndrome, the trisomy of 21 is produced due to
A) Deletion
B) Translocation
C) Non-disjunction
D) Duplication
- 13) The student test is _____ test.
A) Parametric
B) Non parametric
C) Comparing variance
D) None of the above
- 14) Crossing over occurs during
A) Diplotene
B) Pachytene
C) Diakinesis
D) Zygotene



2. Answer **any seven** of the following : **14**
- 1) Mutation.
 - 2) Exogenote.
 - 3) Translocation.
 - 4) Define median.
 - 5) What is cytokinesis ?
 - 6) Define Karyotype.
 - 7) Define pleiotrophy.
 - 8) Law of Dominance.
 - 9) Define linkage.
3. A) Answer **any two** of the following : **10**
- 1) Explain in detail sex determination in human.
 - 2) Describe in detail types of chromosome.
 - 3) What is induced mutation ? Discuss in brief mutagenesis by base analogs.
- B) Describe in detail transformation process of gene transfer. **4**
4. Answer **any two** of the following : **14**
- 1) Explain in detail multiple alleles with example.
 - 2) Define student test. Explain in detail student test with example.
 - 3) Describe in detail process of conjugation.
5. Answer **any two** of the following : **14**
- 1) Describe in detail chromosomal aberration.
 - 2) Define transposon. Discuss in brief types of Transposon.
 - 3) Describe in detail higher order structure of nucleosomes.
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Seat No.	
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B.Sc. II (Semester – III) (Ent.) (CGPA) (New) Examination, 2016
MICROBIAL BIOTECHNOLOGY (Paper – IV)
Fermentation Technology

Day and Date : Wednesday, 13-4-2016

Max. Marks : 70

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

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

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

- 1) Solvent extraction is used for recovery of _____
A) Alcohol B) Amylase C) Penicillin D) None of above
- 2) Vitamin B₁₂ is also known as _____
A) Cobamide B) Provitamin C) Citric acid D) Riboflavin
- 3) _____ is industrial important microorganism used for citric acid production.
A) Aspergillus niger B) B. Subtilis
C) Clastridium spp. D) E. coli
- 4) Fusel oil is by-product of _____ fermentation.
A) Penicillin B) Amylase C) Alcohol D) Lysine
- 5) _____ is the algal single cell protein.
A) Bacillus B) Mucor C) A. niger D) Spirulina
- 6) _____ is symbiotic nitrogen fixing bacteria.
A) Rhizobium B) Azotobacter C) Frankia D) Pseudomonas
- 7) Methanogen contains _____ enzyme in the cell membrane.
A) Amylase B) Pectinase
C) Invertase D) Adenine nucleotide translocase

P.T.O.



- 8) Single stage lysine production is carried out by _____
A) *S. griseofulvus* B) *A. niger*
C) *Corynebacterium* D) *Bacillus*
- 9) _____ is the concentration of sugar in molasses used for alcohol production.
A) 10 – 18% B) 50 – 55% C) 3 – 40% D) 1 – 10%
- 10) _____ is rice beer manufactured in India.
A) Ales B) Lager C) Sonti D) None of these
- 11) *Bacillus Thuriengiensis* used as _____
A) Pesticide B) Wicidicide C) Herbicide D) Insecticide
- 12) _____ is oil eating bug used in utilization of oil waste.
A) *Pseudomonas putida* B) *Bacillus*
C) Algae D) Fungi
- 13) _____ substrate used for commercial production of amylase.
A) carbohydrate B) starch C) lipid D) protein
- 14) Citric acid is used as _____
A) Stabilizer B) Plasticizer
C) Preservative D) All of above

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

14

- 1) Define β lactum antibiotic.
- 2) Enlist raw material used for alcohol production.
- 3) Application of citric acid.
- 4) Define non-symbiotic N_2 fixation.
- 5) What is brewing ?
- 6) Define SCP.
- 7) Mode of action of streptomycin.
- 8) Define biofertilizer.
- 9) Types of amylases.



3. A) Answer **any two** of the following : **10**
- 1) Describe in detail fermentative production of citric acid.
 - 2) Define biogas. Describe in detail biogas production.
 - 3) Discuss distillation as downstream processing for alcohol recovery.
- B) Describe in detail amylase production. **4**
4. Answer **any two** of the following : **14**
- 1) Describe in detail the penicillin production. Add a note on its mode of action.
 - 2) Describe in detail the flow sheet of Beer production from Barley malt.
 - 3) Describe in detail chemical and biological methods for waste treatment.
5. Answer **any two** of the following : **14**
- 1) Give detailed account on spirulina as SCP.
 - 2) Describe in detail the wine production from grapes.
 - 3) Discuss in detail 'Rhizobium as a biofertilizer'.
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B.Sc. (Part – II) (Semester – IV) (Entrepreneurship) (Old) Examination, 2016
INDUSTRIAL CHEMISTRY
Paper – VII : Analytical and Industrial Aspects of Physical Chemistry

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

Total Marks : 50

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

1. Choose the most correct alternative for the following and rewrite the sentence : **10**
- To determine the cell constant is _____ electrolyte is used.
a) NaCl b) K_2SO_4 c) KCl d) Na_2SO_4
 - In premix burner only _____ % of sample is used.
a) 50 b) 5 c) 100 d) 0
 - When the flame temperature decrease, the intensity of the emitted radiation _____
a) Decreases b) Remains constant
c) Increases d) None of these
 - During the conductance measurement _____ current is used.
a) AC b) DC
c) Both of these d) None of these
 - Opacity is defined as reciprocal of _____
a) Absorbance b) Transmittance
c) Reflectance d) None of these
 - The acidic range of pH is _____
a) 0 to 7 b) 7 to 14 c) 0 to 14 d) 1 to 14
 - If summation of the transport numbers of the cation and anion is _____
a) 1.0 b) 0.5 c) 0.05 d) 0.00
 - In potentiometric titrations Quinhydrone electrode is used as _____ electrode.
a) Indicator b) Standard c) Reference d) All of these



- 9) The photocurrent in photoelectric colorimeter is measured by _____
a) Voltmeter b) Ammeter
c) Galvanometer d) All of these
- 10) The burner in which all samples enter the flame is called as _____ burner.
a) Meckers b) Total consumption
c) Premix d) Lundegraph
2. Answer **any five** of the following : 10
- i) Give the principle of Wheatstone bridge circuit.
ii) State Lambert-Beer law.
iii) Define equivalent electrolyte. Give its unit.
iv) Represent glass electrode.
v) How the conductivity water is prepared ?
vi) What do you mean by buffer solution ? Mention different types of it.
3. A) Answer **any two** of the following : 6
- i) Give basic circuit of direct reading potentiometer.
ii) Sketch Wheatstone bridge circuit. Give its principle.
iii) Give the applications of Beer-Lambert's law.
- B) At 298K 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
4. Answer **any two** of the following : 10
- i) Explain how you would determine the pH of a solution using glass electrode.
ii) Mention various methods of color comparison and describe the photoelectric photometer.
iii) What are the applications of flame photometry in qualitative and quantitative analysis ?
5. Answer **any two** of the following : 10
- i) Mention different types of conductometric titrations. Explain conductometric titration between weak acid and weak base.
ii) Discuss instrumentation of flame photometry.
iii) What are different types of buffer ? Explain the mechanism of acidic buffer.
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B.Sc. – II (Semester – IV) (Old) (Entrepreneurship) Examination, 2016
INDUSTRIAL CHEMISTRY (Paper – VIII)
Industrial Aspects of Applied Chemistry

Day and Date : Thursday, 21-4-2016

Max. Marks : 50

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

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

1. Select the most correct alternative from among those given below and rewrite the sentence : 10
- i) The easily fusible product formed due to action of flux on gangue is called
a) Matrix b) Slag c) Gangue d) Collector
- ii) Haematite is a ore of
a) Fe b) Zn c) Al d) Cu
- iii) _____ steel contains iron with 12-15%, chromium and 0.3% carbon.
a) Nickel b) Manganese c) Stainless d) Chromium
- iv) _____ is the process which gives the coating of oxide film on the surface of Al and its alloys.
a) Electrolysis b) Electrophoresis
c) Anodising d) All of these
- v) If cathode efficiency is greater than anode 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%) and is non-hygroscopic in nature.
a) Ammonium sulphate b) Potassium fertilizer
c) Super phosphate d) Urea
- vii) N, P and K consumed in large quantities by the plants for their growth are called _____ nutrients.
a) Primary b) Secondary c) Tertiary d) Micro

P.T.O.



- viii) Glass is _____ of heat and electricity.
 - a) Conductor
 - b) Insulator
 - c) Semiconductor
 - d) All of the above
- ix) _____ is the crushed or broken glass obtained from imperfect articles or waste glass.
 - a) Commercial
 - b) Special
 - c) Coloured
 - d) Cullet
- x) Clay, feldspar and sand are the three main raw materials used in making the _____ products.
 - a) Cement
 - b) Glass
 - c) Ceramics
 - d) Fertilizer

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

10

- i) Define (a) annealing (b) hardening.
- ii) Give any two examples of oxide ore with chemical formula.
- iii) State Faraday's first law of electrolysis.
- iv) Write the qualities of an ideal fertilizer.
- v) Give any two chemical properties of glass.
- vi) What is ceramic ? Give its any two applications.

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

6

- i) Write in brief the action of ammonium sulphate as fertilizer.
- ii) What are the types of glass ? Explain in brief coloured glass.
- iii) Give the classification of ceramics with example.

B) Discuss in detail the sulphuric acid method in process of anodising.

4

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

10

- i) Explain L.D. process for manufacture of steel.
- ii) Describe the electroplating of nickel.
- iii) Give the classification of fertilizers.

5. Write a short note on **any two** of the following :

10

- i) Distinction between calcination and roasting.
 - ii) Tank furnace used in manufacture of glass.
 - iii) Manufacture of portland cement by wet process.
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**B.Sc. – II (Semester – IV) (Entrepreneurship) Examination, 2016
(New – CGPA Pattern)
CORPORATE ACCOUNTING AND PROFESSIONAL ETHICS (Paper – V)**

Day and Date : Saturday, 16-4-2016
Time : 10.30 a.m. to 1.00 p.m.

Max. Marks : 70

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

1. Multiple choice questions :

14

- 1) All those who are affected by or can affect the operations of the organisation are known as _____
 - a) Owners
 - b) Interested Parties
 - c) Stakeholders
 - d) Stockholders
- 2) The stakeholders view of social responsibilities states that organisations must respond to the needs of _____
 - a) Employees and customers
 - b) Shareholders and owners
 - c) All interested parties
 - d) All those who might sue the organisation
- 3) _____ is known as the father of scientific management.
 - a) Fredrick W. Taylor
 - b) Henry Fayol
 - c) Robert Owen
 - d) None of these
- 4) Forces affecting organisational behaviour are _____
 - a) People
 - b) Environment
 - c) Technology
 - d) All of the above



- 5) The best measure of competitiveness is classified as _____
- a) Gross margin
 - b) Income margin
 - c) Sales margin
 - d) Cost margin
- 6) _____ as the systematic design, collection, analysis and reporting of data and findings relevant to a specific market situation facing the company.
- a) Marketing Research
 - b) Marketing planning
 - c) Data collection
 - d) None of the above
- 7) The market price of a share of common stock is determined by _____
- a) The board or directors of the firm
 - b) The stock exchange on which the stock is listed
 - c) The president of the company
 - d) Individuals buying and selling the stock
- 8) Which of the following should be deducted in the balance sheet of a company from the share capital to find out paid-up capital ?
- a) Calls-in-advance
 - b) Calls-in-arrears
 - c) Share forfeiture
 - d) Discount on issue of share
- 9) _____ of a firm refers to the composition of its long-term funds and its capital structure.
- a) Capitalisation
 - b) Over-capitalisation
 - c) Under-capitalisation
 - d) Market capitalisation



- 10) Globalization opportunities for paid work for women has denied them _____
- a) Good health
 - b) Good Education
 - c) Permanent job
 - d) None of these
- 11) The view that sees profit maximization as the main objective is known as _____
- a) Shareholder theory
 - b) Principal agent problem
 - c) Stakeholder theory
 - d) Corporation theory
- 12) The aim of the MNC is to boost accounting profitability by shifting funds around the _____
- a) Country
 - b) Region
 - c) World
 - d) Market
- 13) Where an organization takes into account the effect its strategic decisions have on society this is known as _____
- a) Corporate Governance
 - b) Business policy
 - c) Business ethics
 - d) Corporate social responsibility
- 14) Optimization offered the practical basis for targeting _____
- a) Product
 - b) Customers
 - c) Decisions
 - d) Government



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

- 1) Write note on absorption and mergers.
- 2) What is meant by capital profit and revenue profit ?
- 3) What is meant by Goodwill ?
- 4) Define Net Assets methods.
- 5) Concept of personal and business ethics.
- 6) Roll of MNC.
- 7) Define corporate social responsibility.
- 8) Features of forfeiture of shares.
- 9) Define Global Corporation.

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

1) Following information pertains to Clinton Corporation Ltd.

10,000, 12% preference shares of Rs. 10 each	– 1,00,000
25,000 Equity shares of Rs. 10 each	– 2,50,000
Average Annual Profits 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 to value his shareholding on the basis of above information.

- 2) Importance of Business Ethics.
- 3) Role of Information technology.

B) Explain in detail Corporate Governance.

4



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

1) **Pune Co. Ltd.**

Balance as on 31-3-2004

Liabilities	Rs.	Assets	Rs.
Equity share capital	4,00,000	Cash in hand	50,000
8% preference share capital	1,00,000	Building	3,40,000
10% Debentures	1,00,000	Sundry Debtors	30,000
Outstanding Interest	10,000	Stock	90,000
Sundry creditors	55,000	P & L (Loss)	1,65,000
Pref. Creditors	10,000		
Total	6,75,000	Total	6,75,000

- 1) The company went into liquidation and assets realised as under
 - a) Building Rs. 4,00,000
 - b) Debtors Rs. 50,000
 - c) Stock Rs. 1,20,000
- 2) Liquidation and legal expenses Rs. 15,000.
- 3) Debenture holders are paid on 30th Sep. 2004.
- 4) Preference shares dividend is in arrears for 2 years.
- 5) Liquidators Remuneration is 3% on assets realised and 5% on payment to equity share holders.

Prepare liquidators final statement of account.



2) Anita Co. Ltd. Balance Sheet as on 31-12-2001 :

Liabilities	Rs.	Assets	Rs.
Equity share capital		Good will	45,000
(1500 sh. of Rs. 100 each)	1,50,000	Machinery	1,05,000
12% preference		Stock	97,500
share capital	75,000	Sundry Debtors	52,500
Debentures	45,000	P & L A/c (loss)	42,000
Reserves	30,000	Preliminary Exp.	18,000
Sundry creditors	37,500		
Bills payable	22,500		
Total	3,60,000	Total	3,60,000

Information :

1) The market values of assets and liabilities are as under :

- a) Good will Rs. 67,500
- b) Machinery Rs. 1,80,000
- c) S. Drs. Rs. 45,000
- d) Stock Rs. 1,35,000
- e) S. Cre. Rs. 46,500
- f) Bills payable Rs. 27,000

2) The Net profits are as under :

1999, Rs. 54,000, 2000 Rs. 63,000, 2001 Rs. 67,500.

3) The Normal rate of return in the industry is 8%.

Find :

- a) Intrinsic value
- b) Market value
- c) Fair value of equity shares.



- 3) Define personal and business ethics. What is functional areas of ethics ?
Discuss.

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

14

- 1) 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 on 31-3-2006 :

- a) Equity shares capital 10,000 equity shares of Rs. 10 each.
 - b) General Reserve Rs. 42,000 (on 1-4-2005 Rs. 12,000)
 - c) 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.
- 2) Definition of Corporate Governance. Explain in detail Corporate culture and Corporate social Responsibility.
- 3) Discuss in detail – Marketing ethics.
– Ethics in – HRM.
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**B.Sc. (Entrepreneurship) – II (Semester – IV) (New) (CGPA)
Examination, 2016**

Paper – VI : MARKETING DECISION & INTERNATIONAL MARKETING

Day and Date : Monday, 18-4-2016

Max. Marks : 70

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

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

1. Choose the correct answers from given alternative. **14**
- 1) _____ is concerned with the people and activities involved in the flow of goods and services on sales basis from the producer to consumer.
a) Salesmanship b) Marketing c) Selling d) Advertising
 - 2) Changes in life styles and social values of people indicates the _____ environment of marketing.
a) Political b) Social c) Legal d) Social and Cultural
 - 3) Buyer behaviour is basically _____ in nature.
a) Economical b) Biological c) Social d) Culture
 - 4) _____ marketing is the process of selecting one or more market segments and then developing a product.
a) Target b) Niche c) Segment d) Maxi-Marketing
 - 5) _____ is often described as silent salesman.
a) Branding b) Labelling c) Packaging d) Grading
 - 6) One important ethic of marketing is to honour the rights of
a) Consumer b) Producer c) Society d) Worker
 - 7) _____ advertising is the cheapest amongst all the other advertising medias.
a) Television b) Press c) Radio d) Film
 - 8) Market share analysis is one tool of
a) Marketing planning b) Marketing segmentation
c) Marketing control d) Marketing mix

P.T.O.



- 9) The most common form of direct marketing is
- a) Tele-marketing
 - b) E-mail Marketing
 - c) Direct mail
 - d) Couping
- 10) _____ means sub-division of the entire market.
- a) Marketing planning
 - b) Market segmentation
 - c) Departmentation
 - d) Marketing mix
- 11) The commission agent is an agent who sell goods on behalf of the
- a) Sellers
 - b) Buyers
 - c) Government
 - d) Consumers
- 12) Market planning includes _____
- a) Product positioning
 - b) Market segmentation
 - c) Distribution network
 - d) All of these
- 13) The promotion mix involves to
- a) Advertising
 - b) Personal selling
 - c) Sales promotion
 - d) All of these
- 14) Consumer behaviour consist of all human _____ that go in making purchase decisions.
- a) Behaviour
 - b) Code of conduct
 - c) Character
 - d) Tradition

2. Solve **any seven** questions out of nine :

14

- 1) Define marketing management.
- 2) Meaning of consumer behaviour.
- 3) E-Marketing concept.
- 4) Features of Marketing.
- 5) Global Marketing Environment.
- 6) Give four P's of Marketing.
- 7) Concept of Product Orientation.
- 8) Technology Environment.
- 9) What is Brand Management ?



3. A) Attempt **any two** out of three questions. **10**
- 1) Define in detail types of product.
 - 2) What are the factors influencing on price decision ?
 - 3) What is E-marketing ? Explain its significance in todays context.
- B) Solve. **4**
- Determinants of consumer behaviour.
4. Attempt **any two** out of three questions. **14**
- 1) What are the steps involved in Foreign Trade ?
 - 2) Which are the types of channels of distribution ?
 - 3) Give detail in Modern Marketing concept.
5. Attempt **any two** questions out of three. **14**
- 1) Give Sales Promotion Tools and Techniques.
 - 2) Discuss the Marketing Environment and its effect on marketing activity.
 - 3) What is meant by Retailer ? Give its forms of super market and hyper market.
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B.Sc. – II (Semester – IV) (New CGPA) Examination, 2016
ENTREPRENEURSHIP
Industrial Chemistry (Paper – V)
Analytical and Industrial Aspects of Physical Chemistry

Day and Date : Wednesday, 20-4-2016
Time : 10.30 a.m. to 1.00 p.m.

Total Marks : 70

- Instructions :** 1) **All questions are compulsory.**
2) **Draw neat diagrams wherever necessary.**
3) **Figures to the right indicate full marks.**
4) **Use of logarithmic table and scientific calculator is allowed.**

1. Choose the most correct alternative for the following and rewrite the sentence : **14**

- 1) In premix burner only _____ % of sample is used.
a) 50 b) 5 c) 100 d) 0
- 2) The range of pH is _____
a) 0 to 7 b) 7 to 14 c) 0 to 14 d) 1 to 14
- 3) The relation $E = E^0 + 0.0591 \text{ pH}$ gives the potential of _____ electrode.
a) Quinhydrone b) Calomel
c) Hydrogen d) Glass
- 4) On dilution specific conductance _____
a) Increases b) Decreases
c) Remains constant d) None of these
- 5) In flame photometry only _____ samples are used.
a) Solid b) Liquid c) Gas d) None of these
- 6) The burner in which all samples enter the flame is called as _____ burner.
a) Meckers b) Total consumption
c) Premix d) Lundegraph
- 7) To determine the cell constant _____ electrolyte is used.
a) NaCl b) KCl c) CsCl d) HCl



- 8) The equivalent and molecular conductance are same for _____ electrolytes.
a) 1 : 2 b) 1 : 1 c) 2 : 2 d) All of these
- 9) Which of the following method gives exact end point ?
a) First derivative b) Classical
c) Second derivative d) None of these
- 10) When the flame temperature decrease, the intensity of the emitted radiation _____
a) Decreases b) Remains constant
c) Increases d) None of these
- 11) If transport number of cation is 0.5, then that of anion is _____
a) 1.5 b) 0.5 c) 0.05 d) 0.00
- 12) The photocurrent in photoelectric colorimeter is measured by _____
a) Voltmeter b) Ammeter
c) Galvanometer d) All of these
- 13) Opacity is defined as reciprocal of _____
a) Absorbance b) Transmittance
c) Reflectance d) None of these
- 14) In potentiometric titrations calomel electrode is used as _____ electrode.
a) Indicator b) Standard
c) Reference d) All of these

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

14

- i) What do you mean by buffer solution ? Mention different types of it.
- ii) Represent calomel electrode.
- iii) What is specific resistance ? Mention its unit.
- iv) Give the block diagram of flame photometry.
- v) What are the advantages of the premix burner ?
- vi) Define molar extinction coefficient.
- vii) What is conductivity water ?
- viii) Give the principle of Wheatstone bridge circuit.
- ix) Name different types of conductors.



3. A) Answer **any two** of the following : **10**
- i) What do you mean by second derivative method for locating end points ?
 - ii) Write on different types of conductivity cells.
 - iii) Explain diagrammatically photoelectric cell.
- B) In the moving boundary experiment with 0.01 N solution of HCl, 0.02 amp was passed through a tube of uniform cross section of 0.15 cm². The time taken for the boundary to travel a distance of 3 cm was 100 seconds. Calculate the transport number of H⁺ ion. **4**
4. Answer **any two** of the following : **14**
- i) Explain how you would determine the pH of a solution using glass electrode.
 - ii) Mention various methods of color comparison and describe the photoelectric photometer.
 - iii) What are the applications of flame photometry in qualitative and quantitative analysis ?
5. Answer **any two** of the following : **14**
- i) Mention different types of conductometric titrations. Explain conductometric titration between strong acid and weak base.
 - ii) Give different characteristics of flame. Describe laminar-flow burner.
 - iii) Describe the basic circuit of direct reading potentiometer.
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**B.Sc. (Part – II) (Semester – IV) (Entrepreneurship), (New CGPA)
Examination, 2016
INDUSTRIAL CHEMISTRY (Paper – VI)
Industrial Aspects of Applied Chemistry**

Day and Date : Thursday, 21-4-2016
Time : 10.30 a.m. to 1.00 p.m.

Total Marks : 70

- Instructions :** 1) **All** questions are **compulsory**.
2) **Draw** neat labeled 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) The Greek word “Keramos” means _____
a) Glass b) Polymer c) Fuel d) Ceramic
- ii) _____ steel contains iron with 12-15% Cr and 0.3% C.
a) Nickel b) Manganese
c) Stainless d) Chromium
- iii) The easily fusible product formed due to action of flux on gangue is called _____
a) Matrix b) Slag c) Gangue d) Collector
- iv) _____ is the process which gives coating of oxide film on surface of Al and its alloys.
a) Electrolysis b) Electrophoresis
c) Anodizing d) All of these
- v) If cathode efficiency is greater than anode 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%) and is non-hygroscopic in nature.
- a) Ammonium sulphate
 - b) Potassium fertilizers
 - c) Super phosphate
 - d) Urea
- vii) N, P and K consumed in large quantities by the plants for their growth are called _____ nutrients.
- a) Primary
 - b) Secondary
 - c) Tertiary
 - d) Micro
- viii) Glass is _____ of heat and electricity.
- a) Conductors
 - b) Insulators
 - c) Semiconductors
 - d) All of above
- ix) _____ is the crushed or broken glass obtained from imperfect articles or waste glass.
- a) Commercial
 - b) Special
 - c) Coloured
 - d) Cullet
- x) Clay, feldspar and sand are the three main raw materials used in making the _____
- a) Cement
 - b) Glass
 - c) Ceramics
 - d) Fertilizers
- xi) In electroplating, _____ plays an important role.
- a) Electrolysis
 - b) Electro-osmosis
 - c) Osmosis
 - d) None of these
- xii) Triple super phosphate generally contains 44-47% _____
- a) N_2O_5
 - b) K_2O
 - c) P_2O_5
 - d) None of these
- xiii) Haematite is ore of _____
- a) Fe
 - b) Zn
 - c) Al
 - d) Cu
- xiv) The cement which contains essentially a calcium aluminate and prepared by heating a mixture of limestone and bauxite at 1600°C is called _____ cement.
- a) High alumina
 - b) Low alumina
 - c) Portland
 - d) Sorel's



2. Answer **any seven** of the following : **14**
- i) Define :
 - a) Annealing
 - b) Hardening.
 - ii) Give any two applications of anodizing.
 - iii) State Faraday's first law of electrolysis.
 - iv) Write the good qualities of an ideal fertilizer.
 - v) Give any two chemical properties of glass.
 - vi) What is ceramic ? Give its two applications.
 - vii) What do you mean by direct and indirect fertilizers ?
 - viii) What are coloured glasses ?
 - ix) What is cement ? Give its main content.
3. A) Attempt **any two** of the following : **10**
- i) Write in brief action of ammonium sulphate as fertilizer.
 - ii) Write a note on magnetic separation method used for concentration of ore.
 - iii) Explain in brief electroplating of chromium.
- B) Write the physical properties of glass. **4**
4. Answer **any two** of the following : **14**
- i) Distinction between calcinations and roasting.
 - ii) Describe electroplating of nickel.
 - iii) Give the classification of fertilizers according to their mode of operation on the soil with suitable examples.
5. Write a note on **any two** of the following : **14**
- i) L. D. process for the manufacture of steel.
 - ii) Manufacture by Portland cement by wet process.
 - iii) Tank furnace used in manufacture of glass.
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**B.Sc. – II (Semester – IV) (Entrepreneurship) (New CGPA)
Examination, 2016
MICROBIAL BIOTECHNOLOGY (Paper – V)
Molecular Biology**

Day and Date : Friday, 22-4-2016

Max. Marks : 70

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

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

1. Rewrite the following sentences by choosing correct alternative :

14

1) _____ plays role in unwinding of DNA during replication.

- A) Primase B) Helicase
C) DNA polymerase D) Papain

2) _____ required for the protein synthesis.

- A) m-RNA B) r-RNA
C) t-RNA D) All of these

3) The sigma factor of RNA polymerase required for _____ of transcription.

- A) Initiation B) Elongation
C) Termination D) Modification

4) DNA replication in prokaryotes occurs by _____ mode.

- A) Conservative B) Dispersive
C) Semi-conservative D) None of these

5) A specific sequence of DNA to which RNA polymerase binds called

- A) Repressor B) Operator
C) Promoter D) Enhancer

P.T.O.



- 6) In Eukaryotes transcription of m-RNA carried out by
A) RNA polymerase I B) RNA polymerase II
C) RNA polymerase III D) Ribozymes
- 7) The activated aminoacylated t-RNA binds to _____ site of ribosome during protein synthesis.
A) P B) A
C) E D) All of the above
- 8) _____ serves as non sense codon during translation.
A) AUG B) GUG
C) UAA D) CUC
- 9) 70 's' ribosome in prokaryotes composed from _____ and _____ subunit.
A) 30s and 40s B) 30s and 60s
C) 30s, 50s D) 40s, 60s
- 10) _____ repair mechanism is also called recombination repair.
A) Excision B) Tolerance
C) Retrieval D) Direct
- 11) _____ enzyme is not involved in gene cloning.
A) Endonuclease B) Lyase
C) DNA polymerase D) DNA ligase
- 12) _____ serves as inducer in Lac operon.
A) Maltose B) Glucose
C) Fructose D) Lactose
- 13) The set of DNAs generated by using random primers in PCR reaction is called
A) RAPD B) RFLP
C) AFLP D) FISH
- 14) The starting amino acid in Eukaryotic translation is
A) Tryptophan B) Methionine
C) N-formyl methionine D) Lysine



2. Answer **any seven** of the following : **14**
- i) Define replication.
 - ii) T=T dimer.
 - iii) DNA polymerase – I.
 - iv) Photoreactivation.
 - v) Attenuation.
 - vi) Enlist components of DNA.
 - vii) Structural genes of Lac operon.
 - viii) Operator.
 - ix) Okazaki Fragment.
3. A) Answer **any two** of the following : **10**
- i) Explain in detail structure of t-RNA and add a note on its function.
 - ii) Describe in detail repressor regulation of Lac operon.
 - iii) Define mutation. Discuss in brief excision repair.
- B) Describe in detail Watson-Crick model of DNA. **4**
4. Answer **any two** of the following : **14**
- i) Describe in detail DNA sequencing add a note on its importance.
 - ii) What is genetic code ? Discuss in brief properties of genetic code.
 - iii) Explain in detail chemical and enzymatic methods of DNA isolation.
5. Answer **any two** of the following : **14**
- i) Describe in detail DNA replication in prokaryotes.
 - ii) Write a detailed account on post transcriptional modification.
 - iii) Explain in detail tryptophan operon.
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Seat No.	
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**B.Sc. II (Semester – IV) (Entrepreneurship) (New) (CGPA)
Examination, 2016
MICROBIAL BIOTECHNOLOGY (Paper – VI)
Food and Dairy Technology**

Day and Date : Saturday, 23-4-2016
Time : 10.30 a.m. to 1.00 p.m.

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 alternative. **14**

- 1) Which of the following is not an extrinsic factor in Food Spoilage ?
 - a) Temperature
 - b) Moisture content
 - c) Pressure
 - d) Radiation
- 2) Pasteurization of milk is checked by _____ test.
 - a) SPC
 - b) PTC
 - c) Phosphatase
 - d) Amylase
- 3) The organism which causes food spoilage at high temperature is known as
 - a) Psychrophilic
 - b) Halophilic
 - c) Mesophilic
 - d) Thermophilic
- 4) _____ sugar mainly present in milk.
 - a) Glucose
 - b) Lactose
 - c) Sucrose
 - d) Maltose
- 5) A leading causes of high bacteria count in raw milk is
 - a) Poor sanitation
 - b) Boiling
 - c) Younger cows
 - d) Older cows
- 6) A good average ice-cream would contain about _____ of MSNF content.
 - a) 10%
 - b) 20%
 - c) 11%
 - d) 25%



- 7) Microbial spoilage of protein content in food is called as
a) Lipolysis b) Rancidity c) Hydrolysis d) Putrefaction
- 8) Heat sensitive food material mainly sterilized by
a) Boiling b) Radiation
c) Pasteurization d) Drying
- 9) _____ ionizing radiation used in food preservation.
a) Ozone b) W.V. rays c) X-rays d) None of these
- 10) _____ protein mainly present in milk.
a) Casein b) Albumin c) Gelatin d) Glucose
- 11) _____ °C temperature used in HTST method of pasteurization.
a) 100°C b) 7°C c) 71.1°C d) 90.1°C
- 12) Lactobacillus Bulgarius mainly used in production of _____ milk.
a) canned b) bulgarian c) tanned d) skimmed
- 13) The microorganism which grows at temperature range 20-40°C called as
a) Psychrophilic b) Thermophilic c) Mesophilic d) Halophilic
- 14) Penicillium roqueforti is used for ripening of _____ cheese.
a) Butter b) Comembert c) Swiss d) Roquefortii

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

14

- 1) Thermophilic bacteria.
- 2) Tanned milk.
- 3) Define pasteurization.
- 4) Uses of cream.
- 5) Define canning.
- 6) Flavoured milk.
- 7) General composition of milk.
- 8) MPN.
- 9) Food spoilage.



3. A) Answer **any two** of the following. **10**
- 1) Write a note on microbial examination of milk.
 - 2) Write a note on Butter preparation.
 - 3) Write a note on food as a substrate for microorganism.
- B) Explain in detail cheese production. **4**
4. Answer **any two** of the following. **14**
- 1) Describe in detail Ice-cream preparation.
 - 2) Explain in detail Food Preservation methods.
 - 3) Write in detail microbial examination of food.
5. Answer **any two** of the following. **14**
- 1) Explain in detail microbiology of meat and poultry foods.
 - 2) Describe in detail factors affecting on milk composition.
 - 3) Write in detail manufacturing, packaging and storage of pasteurized milk.
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**B.Sc. – III (Entrepreneurship) (Semester – V) (New) Examination, 2016
BUSINESS FINANCE (Paper – IX)**

Day and Date : Thursday, 31-3-2016

Max. Marks : 50

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

***N.B. : 1) Solve **all** questions.
2) Marks indicate to **right** side.***

1. Choose the correct answers from given alternatives : **10**
- 1) _____ means any type of business activity that crosses the National border.
- a) Export b) International Trade
c) International Business d) Import
- 2) In order to become member of I.F.C. a country must be a member of a
- a) I.M.F. b) World Bank c) I.D.A. d) GATT
- 3) _____ are also called as Integrated Global Enterprise.
- a) Joint Ventures b) Foreign Institutions
c) Global Firms d) Multinational Corporations
- 4) International Finance Corporation was established in the year
- a) 1955 b) 1957 c) 1956 d) 1960
- 5) Financial Budget does include
- a) Capital expenditure budget b) Research and development budget
c) Production budget d) Cash budget
- 6) Wealth maximisation of owner means maximisation of _____ of shares.
- a) Face value b) Market value c) Issue value d) None
- 7) Stock exchanges function under the control of
- a) Members
b) SEBI
c) Securities Registration Committee
d) BSE



- 8) Debenture holders have right to
- | | |
|----------------------------------|---------------------|
| a) Vote | b) Receive interest |
| c) Participate in the management | d) Interest warrant |
- 9) _____ is that rate at which one currency is exchanged for another.
- | | |
|---------------------------|--------------------------|
| a) Fixed Exchange Rate | b) Foreign Exchange Rate |
| c) Flexible Exchange Rate | d) Domestic Rate |
- 10) Twelfth Five Year Planning period is
- | | | | |
|------------|------------|------------|------------|
| a) 2007-12 | b) 2012-17 | c) 2002-07 | d) 2010-15 |
|------------|------------|------------|------------|

2. Write **any five** questions out of seven : **10**
- 1) Introduction of IBRD.
 - 2) Debentures.
 - 3) Foreign Exchange.
 - 4) On-line Trading.
 - 5) Public Deposits.
 - 6) Nature of Business Finance.
 - 7) Lease Finance.
3. A) Write **any two** questions out of three : **6**
- 1) Loan from banks.
 - 2) Types of financial planning.
 - 3) Issue of securities.
- B) Solve **any two** questions out of three. **4**
- 1) Steps in public issue.
 - 2) Importance of Business Finance.
 - 3) Objectives of IMF.
4. Write **any two** questions answers out of three : **10**
- 1) Sources of working capital finance.
 - 2) Define on-line trading.
 - 3) Objective of financial planning.
5. Write **any two** questions of answers out of three : **10**
- 1) Give the functions and role of foreign exchange market.
 - 2) Define the method of budgeting payback period method.
 - 3) What are the functions of stock exchange in India ?
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Seat No.	
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**B.Sc. (Entrepreneurship) – III (Semester – V) (New) Examination, 2016
HUMAN RESOURCE MANAGEMENT (Paper – IX)**

Day and Date : Friday, 1-4-2016
Time : 2.30 p.m. to 4.30 p.m.

Max. Marks : 50

N. B. : All questions are compulsory.

1. Multiple Choice Questions :

10

- 1) Poor quality of selection will mean extra cost on _____ and supervision.
a) Training b) Recruitment c) Work Quality d) None of the above
- 2) Which of the following Act deals with recruitment and selection ?
a) Child Labour Act b) The Apprentices Act
c) Mines Act d) All of the above
- 3) _____ refers to the process of identifying and attracting job seekers so as to build a pool of qualified job applicants.
a) Selection b) Training c) recruitments d) Induction
- 4) The Primary benefits of most organization includes
a) Unemployment compensation b) Severance pay
c) Worker's compensation d) All of above
- 5) Which of these is an off-the-job training method ?
a) Television b) Job rotation
c) Orientation training d) Coaching
- 6) Successful defenders use performance appraisal for identifying _____
a) Staffing needs b) Job behaviour
c) Training needs d) None of the above
- 7) What do successful analysers tend to examine ?
a) Division and corporate performance evaluation.
b) Current performance with past performance
c) Ideal appraisal process
d) None of the above

P.T.O.



8) In career development, establishing self career goals is included in

- _____
- a) Individual role
 - b) Manager role
 - c) Employer role
 - d) Line manager

9) What is linked with performance appraisal ?

- a) Job design
- b) Development
- c) Job analysis
- d) None of the above

10) Internal recruitment has the potentiality to increase the _____ of the employees.

- a) Conflicts
- b) Misunderstanding
- c) Income
- d) Morale

2. Write **any five** from the following : **10**

- 1) Meaning and definition of HRM.
- 2) What is management ?
- 3) Meaning and definition of recruitment.
- 4) Objectives of recruitment.
- 5) Job description.
- 6) Job specification.
- 7) Promotion.

3. A) Write **any two** out of three : **6**

- 1) Types of transfer
- 2) Job analysis
- 3) Use of P.A.

B) Concept of selection. Discuss. **4**

4. Write **any two** from the following : **10**

- 1) Principles of development.
- 2) Methods of P.A.
- 3) Employee health and safety.

5. Write **any one** from the following : **10**

- 1) External and Internal sources of recruitment. Explain with diagrammatic representation.
 - 2) Explain in detail different kinds of training methods.
- _____



Seat No.	
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B.Sc. (Part – III) (Entrepreneurship) (Semester – V) Examination, 2016
INDUSTRIAL CHEMISTRY (New)
(Paper – IX) (Spectroscopic Methods)

Day and Date : Saturday, 2-4-2016

Max. Marks : 50

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

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

1. Select the most correct alternative among those given below and rewrite the sentence :

10

- 1) The IR-absorption peaks due to –OH stretch in alcohol is
a) Sharp b) Intense c) Broad d) Very weak
- 2) The IR studies of organic compound are centered in the range of
a) 4000-660 cm b) 12,500-4,000 cm
c) 660-50 cm d) 50-10 cm
- 3) A typical example of chromophore is
a) carbonyl group b) – OH
c) NH₂ d) Cl
- 4) The magnitude of secondary field depends upon
a) electron density and applied field
b) intensity
c) number of atoms
d) both a and b

P.T.O.



- 5) The number of fundamental vibrations for non-linear molecule are
a) $3n-6$ b) $3-6n$ c) $3n-5$ d) $6n-3$
- 6) The value of I signifies
a) resultant spin of nucleons b) spin of proton
c) spin of neutron d) spin of electron
- 7) In mass spectroscopy ions are separated according to
a) m/z b) z/m c) m/Hz d) Hz/m
- 8) PMR spectrum of ethane will show _____ signals.
a) 3 b) 2 c) 1 d) 5
- 9) Wave number is expressed in _____ units.
a) cm b) cm^{-1} c) Hz d) delta
- 10) _____ electronic transition requires highest energy.
a) σ to σ^* b) n to σ^* c) π to π^* d) n to π^*

2. Answers **any five** of the following :

10

- 1) Why TMS is used as reference in NMR spectroscopy ?
- 2) Define bathochromic and hypsochromic shifts.
- 3) What are Principles of IR spectroscopy ?
- 4) Explain Beer-Lambert's law.
- 5) State applications of IR spectroscopy.
- 6) Explain coupling constant with example.



3. A) Answer **any two** of the following : 6
- 1) Discuss how UV–Visible spectroscopy can be used for study of geometrical isomers.
 - 2) State and explain principles of mass spectroscopy.
 - 3) Predict the structures of the following three isomeric compounds having the formula C_3H_6O absorption at the frequencies at :
 - a) 1720 cm^{-1} b) $1620, 3300\text{ cm}^{-1}$
 - c) $2720, 1720\text{ cm}^{-1}$
- B) Explain the advantages of TMS in NMR – spectroscopy. 4
4. Answer **any two** of the following : 10
- 1) Explain processional motion of hydrogen nuclei under the influence of magnetic field.
 - 2) Discuss the types of electronic transitions produced by absorbing UV-Visible radiations.
 - 3) What is functional group region in IR spectroscopy ? How it can be used for structure determination of an organic compound ?
5. Answer **any two** of the following : 10
- 1) Assign a possible structure to the compound having spectroscopic data : molecular formula C_8H_8O , show IR-absorption frequencies of $1680, 1720\text{ cm}^{-1}$. $1600, 1500, 1430, 1360, 690\text{ cm}^{-1}$. NMR data peaks at (3H, S) (2.47) and (5H, S) (7.81).
 - 2) What are different modes of vibrations in IR spectroscopy ?
 - 3) Draw schematic labelled diagram of mass spectrometer.



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 - CH = CH ₂	985 - 1000	(s)
	and 905 - 920	(s)
R ₂ C = CH ₂ (out of plane C-H bendings)	880 - 900	(s)
cis - RCH = CHR	675 - 730	(s)
trans - RCH = CHR	960 - 975	(s)
C. Alkynyl		
\equiv C - H (stretching)	- 3300	(s)
C \equiv 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 { stre 2700 - 2900	1630 - 1780	(s)
aldehydes	1690 - 1740	(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 \equiv N	2220 - 2260	(m)



TABLE - 2
Approximate Proton Chemical Shifts in NMR

TYPE OF PROTON	CHEMICAL SHIFT, DELTA, PPM (δ)	
1° Alkyl, RCH ₃	0.8 - 1.0	O
2° Alkyl, RCH ₂ R	1.2 - 1.4	
3° Alkyl R ₃ CH	1.4 - 1.7	Ester R - C - O - CH ₂ - R 4 to 4.5
Allylic, R ₂ C = C - CH ₃	1.6 - 1.9	N - CH ₃ 2.3
Benzylic, ArCH ₂	2.2 - 2.5	
Alkyl chloride RCH ₂ Cl	3.6 - 3.8	
Alkyl bromide, RCH ₂ Br	3.4 - 3.6	
Alkyl iodide, RCH ₂ I	3.1 - 3.3	
Ether, ROCH ₂ R	3.3 - 3.9	
Alcohol, HOCH ₂ R	3.3 - 4.0	
Ketone, RCCH ₃	2.1 - 2.6	
Aldehyde, RCH	9.5 - 9.6	
Vinyllic, R ₂ C = CH ₂	4.6 - 5.0	
Vinyllic R ₂ C = CH	5.2 - 5.7	
Aromatic, ArH	6.0 - 9.5	
Acetylenic, RC \equiv CH	2.5 - 3.1	
Alcohol hydroxyl, ROH	0.5 - 6.0 ^a	
Carboxylic, RCOH	10 - 13 ^a	
Phenolic, ArOH	4.5 - 7.7 ^a	
Amino R - NH ₂	1.0 - 5.0	

^aThe chemical shifts of these groups vary in different solvents and with temperature and concentration.

TABLE - 3
U.V. Absorption rules for diene chromophores

- 1) Parent 215 nm
- 2) Each extra conjugation 30 nm
- 3) Homoannular 39 nm
- 4) Exocyclic double bond 05 nm
- 5) Each alkyl (R) substituent directly attached to double bonded carbon 05 nm

U.V. Absorption rules for Enone System

- 1) Parent 215 nm
- 2) Each extra conjugation 30 nm
- 3) Homoannular 39 nm
- 4) Substituents
 - a) Alkyl group at α 10 nm
 - b) Alkyl group at β 12 nm
 - c) Alkyl group at γ, δ 18 nm

	α	β	γ
Cl	15	12	
OH, OR	35	30	
SR		85	
NR ₂		95	
O		75	
Acyl	6	6	6



Seat No.	
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B.Sc. – III (Entrepreneurship) (Semester – V) (New) Examination, 2016
INDUSTRIAL MICROBIOLOGY AND INDUSTRIAL BIOTECHNOLOGY
(Paper – IX)
Advances in Fermentation Technology

Day and Date : Monday, 4-4-2016

Max. Marks : 50

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

Instructions : 1) Draw a **neat** labelled diagram **wherever** necessary.
2) **All** questions carry **equal** marks.
3) Figures to **right** indicate **full** marks.

1. Choose and write a correct answer from given four alternatives : **10**
- 1) Xanthum gum which is produced by
 - a) Penicillium
 - b) Bacillus subtilis
 - c) Xanthomonas competris
 - d) Aspergillus
 - 2) Insulin which is mainly produced by
 - a) Pancreas
 - b) Liver
 - c) Kidney
 - d) None of these
 - 3) GLP it means
 - a) Good Manufacturing Practices
 - b) Good Laboratories Practices
 - c) Both (a) and b)
 - d) None of these
 - 4) Vinegar production is carried out by
 - a) Aspergillus niger
 - b) Lactobacillus
 - c) E.Coli
 - d) Acetic acid bacteria



3. A) Answer **any two** of the following : **6**
- i) Write a note on DNA vaccine.
 - ii) Define biopolymer and give two example.
 - iii) Discuss in brief insulin production.
- B) Explain in detail bacteriocin production. **4**
4. Answer **any two** of the following : **10**
- i) Explain in detail biosafety levels and laboratory biosecurity.
 - ii) Describe in detail PHB production.
 - iii) Write in detail GLP and its principles.
5. Answer **any one** of the following : **10**
- i) Describe in detail vinegar production.
 - ii) Explain in detail Acetone-butanol production and applications.
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Seat No.	
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B.Sc. – III (Semester – VI) Examination, 2016
ENGLISH Compulsory (Old)
Count-down : English Skills for Success

Day and Date : Tuesday, 22-3-2016
Time : 10.30 a.m. to 12.30 p.m.

Max. Marks : 50

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

1. A) Choose the correct alternative :

6

- i) The higher our self-esteem, the more _____ we tend to be.
 - a) Selfish
 - b) Ambitious
 - c) Selfless
 - d) Helpful
- ii) To be self-assertive is to _____ our wants and needs.
 - a) Honour
 - b) Evaluate
 - c) To despise
 - d) To love
- iii) Our approach to the problem of disease is even less
 - a) Irrational
 - b) Rational
 - c) Emotional
 - d) Intellectual
- iv) Rahim Khan was _____ years old.
 - a) Sixty
 - b) Forty
 - c) Forty-five
 - d) Fifty
- v) In the poem 'Refugee Mother and Child' the smile of the mother is compared with
 - a) A ghost smile
 - b) A beautiful smile
 - c) An angel smile
 - d) A monkey smile
- vi) The poet sees the Daffodils dancing in
 - a) The forest
 - b) The breeze
 - c) The lake
 - d) The hills



- B) Rewrite the following sentences choosing the correct idioms. 2
- i) She tried very hard to give her children a decent education.
- a) Keep one's fingers crossed b) Face the music
c) Move heaven and earth d) Draw the line
- ii) Smita stayed calm when she found her boat sinking.
- a) Lost her head b) Kept her head above water
c) Kept her head d) Keep one's fingers crossed
- C) Rewrite the following sentences choosing the correct collocations. 2
- i) Last year, I _____ an M.A. Examination.
- a) Give b) Faced
c) Took d) Had given
- ii) The meeting was organised to _____ the issue of corruption in higher education.
- a) Decide b) Solve
c) Finalise d) Resolve
2. Answer **any five** of the following questions in brief. 10
- 1) Write any two results of low esteem.
 - 2) How does science affect the average men and women ?
 - 3) Why was Rahim Khan disappointed during his youth ?
 - 4) Write any three pillars of self-esteem.
 - 5) How were diseases considered during the pre-Christian period ?
 - 6) How did sparrows provide Rahim Khan with relief ?
3. A) Answer **any two** of the following questions. 6
- 1) Why is the air described as 'heavy with odours' ?
 - 2) What is the theme of the poem 'Refugee Mother and Child' ?
 - 3) What does the poet say about the dance of the Daffodils ?
- B) Answer the following : 4
- 1) You have failed the M.P.S.C. examination. How will you manage the strace of this failure ?
 - 2) You are working in a multi-national company. You have been transferred to a foreign country. How will you adopt to the foreign environment ?



4. A) Write a description of a woman you met at cinema theatre. Give details of the personality traits of the woman. **10**

OR

B) Describe in details the place you visited in the summer vacation.

5. Read the following passage and summarise it. **10**

Raman was a brilliant student, a very original thinker and a hardworking, disciplined person, but he deserves to be admired for far more than just these qualities. In his youth, India was not a free country and there were hardly any institutions, or even libraries, to support the pursuit of higher education. Raman was able to contribute so greatly to Indian science only because of his deep and genuine passion for physics and his commitment to finding answers to questions that puzzled him. The scientist also showed remarkable independence in choosing to work in areas that excited his curiosity. Further, when faced with a lack of infrastructure, he always improved and built up whatever he needed from scratch. C.V. Raman's determination, spirit and contributions will indeed remain special within the context of the practice of science in India.



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**B.Sc. III (Entrepreneurship) (Semester – VI) Examination, 2016
ENGLISH (Compulsory) (New)
Breakthrough**

Day and Date : Tuesday, 22-3-2016
Time : 10.30 a.m. to 12.30 p.m.

Max. Marks : 50

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

1. Choose the correct alternative : **10**
- 1) The action of the story whitewashing the fence takes place on _____ morning.
a) Monday b) Saturday c) Sunday d) Friday
 - 2) The work that had always been hateful in Tom's eyes was
a) bringing oil from the shop
b) whitewashing the fence
c) painting pictures
d) bringing water from town pump
 - 3) The price of the necklace that Mathilde lost was
a) Forty Francs
b) Thirty-six francs
c) Five hundred francs
d) Thirty-six thousand francs
 - 4) Pyramus and Thisbe belong to
a) Babylonia b) Somalia c) Syria d) Romania
 - 5) The poem 'In the Bazaars of Hyderabad' is
a) a lyric b) a sonnet c) an elegy d) an ode
 - 6) _____ is referred to as an auspicious queen in the poem 'On Virtue'.
a) Virtue b) Wisdom c) Chastity d) Glory
 - 7) The tag question for the sentence "Somebody left the book on the table" is
a) did they ? b) did he ?
c) didn't he ? d) didn't they ?



- 8) The sentence “It was raining, yet we went shopping” is a
- a) simple sentence
 - b) complex sentence
 - c) compound sentence
 - d) None of the above
- 9) “The man ‘whom I met yesterday’ was a musician”. The underlined clause is
- a) a noun clause
 - b) a relative clause
 - c) an adverbial clause
 - d) a prepositional clause
- 10) The sentence “Does Kiran play the Sitar”? is
- a) a yes/no question
 - b) a WH question
 - c) a rhetorical question
 - d) an imperative sentence

2. Answer **any five** of the following questions in short :

10

- 1) Why was Mathilde unhappy ?
- 2) How did Loisel and Mathilde replace the necklace ?
- 3) How did Tom persuade Jim to help with his task ?
- 4) What was Tom’s great magnificent inspiration ?
- 5) Why did Pyramus and Thisbe kill themselves ?
- 6) What message does Thomas Bulfinch convey through the story pyramus and thisbe ?

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

6

- 1) How is Wisdom described in On Virtue ?
- 2) What are the merchants selling in the Bazaars of Hydrabad ?
- 3) What kind of music is being played in the Bazaars of Hydrabad ?

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

4

- 1) Write the important tips on time management.
- 2) Imagine you have failed the V semester of compulsory English paper. How will you manage stress and overcome the failure ?
- 3) Your sister has lost her laptop in her classroom. She is under depreciation. How will you help your sister to solve the problem ?



4. A) You travelled to Mumbai for attending an interview. During the journey by train you were introduced to a fellow passenger coming from Pune. Describe the person you met during this journey by throwing light on his personality traits. 10

OR

- B) Write a description of a national hockey-player you watched at an interview programme on T.V. conducted by the TV anchor, by describing his personal qualities, attitudes, speech etc.

5. Read the following passage and write one-third summary of it. 10

Trees give shade for the benefits of others and while they themselves stand in the sun and endure scorching heat, they produce the fruit by which others profit. The character of good men is like that of trees. What is the use of this perishable body, if no use of it is made for the benefit of mankind ? Sandalwood – the more it is rubbed the more scent does it yield. Sugarcane – the more it is peeled and cut into pieces, the more juice does it produce. Gold – the more it is burnt, the more brightly does it shine. The men who are noble at heart do not lose these qualities even in losing their lives. What does it matter whether men praises them or not ? What difference does it make whether riches abide with them or not ? What does it signify whether they die at this moment or whether their lives prolonged ? Happen what may, those who tread in the right path will not set foot in any other. Life itself is unprofitable to a man who does not live for others. To live for the mere shake of living one's life is to live the life of dogs and cows. Those who lay down their lives for the shake of a friend or even for the sake of a stranger, will assuredly dwell forever in a world of bliss.



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**B.Sc. – III (Semester – VI) (Entrepreneurship) Examination, 2016
Paper – X (New) : INTERNATIONAL BUSINESS**

Day and Date : Wednesday, 23-3-2016

Max. Marks : 50

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

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

1. Choose the correct answers from given alternative : **10**
- 1) _____ are the operations objectives of the International Business.
a) Sales expansion b) Resource acquisition
c) Diversification d) All of these
 - 2) GATT came into force on
a) 1947 b) 1949
c) 1959 d) 1956
 - 3) A global company sometimes called a _____ company.
a) A joint stock company b) A globally integrated company
c) A multi domestic company d) All of these
 - 4) The membership of the ADB (Asian Development Bank) is open to all countries in
a) Asia b) South Asia
c) Europe d) Africa
 - 5) The Reciprocal Demand Theory of International business was formulated by
a) J.S. Mill b) D. Ricardo
c) M. Porter d) A. Smith
 - 6) _____ are also called as 'Integrated Global Enterprise'.
a) Joint ventures b) Foreign institutions
c) Global firms d) Multinational corporations



- 7) The member countries of the NAFTA includes USA, Canada and
- a) U.K.
 - b) Brazil
 - c) Argentina
 - d) Mexico
- 8) _____ is that rate at which one currency is exchanged for another.
- a) Fixed Exchange Rate
 - b) Foreign Exchange Rate
 - c) Flexible Exchange Rate
 - d) Domestic Rate
- 9) Most favoured nation treatment is the basic principle of
- a) GATT
 - b) WTO
 - c) IMF
 - d) World Bank
- 10) During 1980's and ultimately GATT was replaced by the WTO on 1st January
- a) 1992
 - b) 1985
 - c) 1995
 - d) 2000

2. Short notes (**any five**) : **10**
- 1) What is meant by International Business ?
 - 2) Give the definition of MNC.
 - 3) What is meant by Balance of Payments ?
 - 4) Objectives of ADB (Asian Development Bank).
 - 5) Meaning of FDI.
 - 6) What is meant by Joint Venture ?
3. A) Write short notes (**any two**) : **6**
- 1) Nature of International Business.
 - 2) Give the theory of comparative cost advantage.
 - 3) What are the components of BOP ?
- B) Define the concept of E-commerce. **4**
4. Solve **any two** out of three questions : **10**
- 1) What are the advantages of Globalisation ?
 - 2) What is meant by Multinational Corporation and give its advantages ?
 - 3) FDI in India.
5. Write **two** questions out of 3 : **10**
- 1) Define SAARC, objectives and functions of organisation.
 - 2) What is meant by EU and its objectives.
 - 3) Factors influence in FDI.
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B.Sc. (Entrepreneurship) (Semester – VI) (New) Examination, 2016
ORGANIZATIONAL BEHAVIOUR
Entrepreneurship (Paper – X)

Day and Date : Saturday, 26-3-2016

Max. Marks : 50

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

- N.B. :** 1) **All questions are compulsory.**
2) **Figures to the right indicate full marks.**
3) **Draw the diagram if necessary.**

1. Choose the correct answer from given alternative : **10**
- 1) Job satisfaction have _____ related to Absenteeism and Turnover.
a) Positively b) Negatively c) Directly d) Elastically
 - 2) _____ is the force of action or motivation.
a) Behaviour b) Stimulus c) Perception d) Attitude
 - 3) _____ is a study of group behaviour.
a) Anthropology b) Psychology c) Physiology d) Sociology
 - 4) _____ framework is based on the concept of expectancy, demand and intention of the human being.
a) Behaviouristic b) Expectancy
c) Cognitive d) Social learning
 - 5) According to Edward Tolman, _____ consists of the expectancy that a particular event will lead to a particular consequence.
a) Eventual b) Behaviour c) Learning d) Attitude
 - 6) Organizational behaviour focuses at 3 levels
a) Individuals, organization, society
b) Society, organization, nation
c) Individual, groups, organization
d) Employee, employer, management



- 7) Scope of organizational behaviour does not include
a) Leadership b) Perception c) Job design d) Technology
- 8) _____ is a study of individual behaviour.
a) Anthropology b) Psychology
c) Political science d) Sociology
- 9) Due to emphasis on productivity and efficiency employee are not allowed work with harmony with one another is a limitation of
a) Organizational Cultural b) Organizational Structure
c) Ogrnizational Behaviour d) Organizational Value
- 10) The attitude based on feelings, sentiments and emotions of any person is under _____ component of attitude.
a) Behavioural b) Cognitive c) Affective d) Positive

2. Short note **(any 5)** : **10**
- 1) Definition of organization behaviour.
 - 2) What is learning organization ?
 - 3) What is group ?
 - 4) Nature of personality ?
 - 5) What is motivation ?
 - 6) What is stress ?
3. A) Write short note **(any 2)** : **6**
- 1) The electronic commerce environment.
 - 2) Nature of motivation.
 - 3) Factors influencing perceptions.
- B) Types of personality. **4**
4. Write down the following questions answer **(any 2)** : **10**
- 1) Ethics of power and politics.
 - 2) Maslos theory.
 - 3) Importance of motivation.
5. Write brief questions **(any 2)** : **10**
- 1) Internet monetary payment and security requirements.
 - 2) Global setting theory.
 - 3) Type of group.
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B.Sc. – III (Semester – VI) (Entrepreneurship) Examination, 2016
INDUSTRIAL CHEMISTRY (Paper – X) (New)
Techniques in Industrial Chemistry

Day and Date : Monday, 28-3-2016
Time : 10.30 a.m. to 12.30 p.m.

Max. Marks : 50

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

1. Select most correct alternative from those given below and rewrite the sentence : **10**

- i) In paper chromatography, filter paper is used as _____
a) Stationary phase b) Mobile phase
c) Support d) Spraying reagent
- ii) The silica gel is used as _____ in thin layer chromatography.
a) Stationary phase b) Mobile phase
c) Support d) None of these
- iii) In zeolite, the central exchangeable ion is _____
a) Al^{3+} b) Na^+ c) Si^{4+} d) None of these
- iv) Biocatalytic reactions are catalyzed by _____
a) Carbohydrates b) Protein
c) Alcohol d) Enzyme
- v) In gas chromatography, _____ is used as mobile phase.
a) Helium b) Hydrogen cyanide
c) Petroleum ether d) Ethyl alcohol
- vi) In column chromatography, mobile phase is _____
a) Eluent b) Adsorbent c) Column d) Cellulose
- vii) _____ is the process which gives the coating of oxide film on surface of Al and its alloys.
a) Electrolysis b) Electrophoresis
c) Anodising d) All of these



- viii) _____ is an example of type fire A.
a) Wood
b) Oils
c) Electrical source
d) None of these
- ix) Water is hard due to presence of _____ ions.
a) Al^{3+} and Si^{2+}
b) Na^{+} and K^{+}
c) Ca^{2+} and Mg^{2+}
d) None of these
- x) Microwave reactions are _____
a) Slower
b) Faster
c) Moderate
d) None of these

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

- What is general principles of chromatography ?
- Give the Friedel Craft acylation using zeolite.
- Give the advantages of gas chromatography.
- Gives the Faraday's laws of electrolysis.
- What is green chemistry ?
- Explain Soda acid extinguishers.

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

- What are the applications of TLC ?
- Explain Microwave assisted esterification.
- Write a short note on cleaning of articles.

B) What is Column chromatography ? Give its applications. **4**

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

- Give twelve principles of green chemistry.
- Describe all the details involved in the electroplating of chromium.
- Give the classification of water and water base extinguishers.

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

- What is paper chromatography ? Discuss in detail experimental procedure of paper chromatography.
- What are zeolite ? How they are used for oxidation of benzene to phenol and hydroquinone.
- What is electroplating ? Give the applications of Nickel Plating.



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B.Sc. – III (Semester – VI) (Entrepreneurship) (New) Examination, 2016
INDUSTRIAL MICROBIOLOGY AND INDUSTRIAL BIOTECHNOLOGY
(Paper – X)
Genetic Engineering and Techniques in Plant Tissue Culture

Day and Date : Tuesday, 29-3-2016
Time : 10.30 a.m. to 12.30 p.m.

Max. Marks : 50

- N.B. :** i) Figures to the **right** indicate **full** marks.
ii) **All** questions are **compulsory** and carry **equal** marks.
iii) Draw a neat, well labelled, complete diagram **whenever** necessary.

1. Rewrite the sentence by choosing correct alternative. 10
- 1) _____ vector include plasmids that can propagate in eukaryotes and prokaryotes.
a) Phagemid b) Phasmid c) Shuttle d) None
- 2) _____ can be used to build genomic libraries.
a) Cosmids b) Phagemid c) Phasmid d) None
- 3) In Agarose gel electrophoresis, DNA as well as RNA are normally visualized by staining with
a) Ethidium bromide b) Cresol red
c) Orange G d) Xylene cyanol
- 4) In _____ technique, a solution of acrylamide and bisacrylamide is polymerized.
a) Agarose gel electrophoresis
b) Polyacrylamide gel electrophoresis
c) Southern blotting
d) Pulsed field gel electrophoresis



- 5) _____ is most commonly used solidifying agent in media.
- a) Auxin b) Agar
c) Sodium d) Ampicillin
- 6) _____ is one of the following growth hormone is used in plant tissue culture.
- a) Thiamine b) Pyridoxine
c) Kinetin d) Nicotinic acid
- 7) In _____ blotting technique DNA fragments are blotted on to a nitrocellulose filter paper.
- a) Western b) Eastern c) Northern d) Southern
- 8) For initiation of PCR reaction, _____ is/are required in the reaction mixture.
- a) Taq DNA polymerase b) Primers
c) dHTPS d) All of these
- 9) _____ library is prepared by reverse-transcribing a population of mRNAs and then screened for particular clones.
- a) DNA b) cDNA c) RNA d) Protein
- 10) The supercoiling of DNA is relaxed by the action of
- a) ligase b) polymerase
c) topoisomerases d) all of these

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

10

- 1) Define callus.
- 2) Enlist any 4 vitamins used for preparation of PTC media.
- 3) Define cell suspension culture.
- 4) Write biological function of Nucleases.
- 5) Differentiate between Southern and Northern blotting.
- 6) Name any two enzymes used in PCR.



3. A) Answer **any two** of the following : **6**
- 1) Draw a neat, well labelled diagram that explains principle of cell suspension culture.
 - 2) What are plasmid vectors ?
 - 3) Write the role of enzyme in gene cloning-Ligases.
- B) Write a note on PAGE. **4**
4. Answer **any two** of the following : **10**
- 1) Write an essay on callus culture.
 - 2) Write a note on Transgenic plants.
 - 3) Write a note on Southern blotting.
5. Answer **any one** of the following : **10**
- 1) Give a detailed account on 'PCR'.
 - 2) What is an organ culture ? Add a note on ovary culture.
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