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**B.Sc. I (Semester – I) Examination, 2014  
ENTREPRENEURSHIP (Paper – I) (Old)  
Entrepreneurship and The World of Business**

Day and Date : Monday, 3-11-2014

Max. Marks : 50

Time : 3.00 p.m. to 5.00 p.m.

**1. Multiple Choice Questions :**

**10**

- 1) Entrepreneurial competencies dealt with
  - a) Self assessment
  - b) Competency recognition
  - c) Motivation
  - d) All the above
- 2) Role of entrepreneurs are
  - a) Idea generation
  - b) Systematic Innovation
  - c) Implementation of mechanical skill
  - d) All the above
- 3) Features of entrepreneurship is
  - a) Economic Activity
  - b) Innovative Activity
  - c) Creative Activity
  - d) All the above
- 4) Barriers to entrepreneurship is
  - a) Lack of seed capital
  - b) Lack of market knowledge
  - c) Lack of technical skill
  - d) All the above
- 5) Ethics is branch of
  - a) Social values
  - b) Philosophy
  - c) Psychology
  - d) None of these
- 6) Decision is one of the \_\_\_\_\_ function of entrepreneurship.
  - a) Administrative
  - b) Managerial
  - c) Personal
  - d) None of these
- 7) Sudha Murthy is one of the successful entrepreneur in \_\_\_\_\_ sector.
  - a) IT
  - b) Automobile
  - c) Retail
  - d) None of these
- 8) Major objective of business is
  - a) profit maximisation
  - b) wealth maximisation
  - c) both a) and b)
  - d) none of these

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- 9) Function of entrepreneur is
  - a) Idea generation
  - b) Raising of funds
  - c) Determination of objective
  - d) All the above
- 10) \_\_\_\_\_ entrepreneur is characterized by great caution and scepticism in practicing any change.
  - a) Innovating
  - b) Fabian
  - c) Imitative
  - d) None of these

- 2. Answer **any five** of the following : 10
    - 1) Write note on partnership firm.
    - 2) Write note on women entrepreneurship.
    - 3) Write note on risk bearings.
    - 4) Explain objectives of business.
    - 5) Explain the seed capital.
    - 6) Explain motivation concept.
  - 3. A) Answer **any two** of the following : 6
    - 1) Explain qualities required to become a successful entrepreneur.
    - 2) Comment on scope of entrepreneurship in India.
    - 3) Explain nature and scope of business ethics.
  - B) Write note on factors responsible for emergence of entrepreneurship. 4
  - 4. Answer **any two** of the following : 10
    - 1) Difference between entrepreneur and entrepreneurship.
    - 2) Write note on multinational and trans national company.
    - 3) Write note on problems faced by women entrepreneur.
  - 5. Attempt **any two** of the following : 10
    - 1) Explain in detail types of entrepreneurs.
    - 2) Explain in detail importance of business ethics in India.
    - 3) Write note on entrepreneurship as process.
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**B.Sc. I (Semester – I) (Entrepreneurship) Examination, 2014  
INDUSTRIAL MICROBIOLOGY – I  
Fundamentals of Microbiology (Old)**

Day and Date : Monday, 10-11-2014

Max. Marks : 50

Time : 3.00 p.m. to 5.00 p.m.

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

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

1. Rewrite the sentences by selecting correct answer from the given alternatives. **10**

- 1) The process of fractional sterilization was devised by
  - a) John Tyndall
  - b) Louis Pasteur
  - c) Robert Koch
  - d) Joseph Lister
- 2) \_\_\_\_\_ is example of photosynthetic micro-organism.
  - a) Fungi
  - b) Protozoa
  - c) Virus
  - d) Algae
- 3) Structural rigidity of bacterial cell is due to
  - a) Cell membrane
  - b) Cell wall
  - c) Capsule
  - d) Pili
- 4) \_\_\_\_\_ is outermost covering of virus.
  - a) Capsid
  - b) Spike
  - c) Sheath
  - d) Envelope
- 5) \_\_\_\_\_ ribosome is found in bacteria.
  - a) 80S
  - b) 70S
  - c) 90S
  - d) 20S
- 6) Methanogenic bacteria is an example of
  - a) Yeast
  - b) Virus
  - c) Archaeobacteria
  - d) Algae
- 7) Locomotion of bacteria is due to
  - a) Pili
  - b) Cell membrane
  - c) Flagella
  - d) Capsule
- 8) The genetic material of virus is
  - a) DNA
  - b) Either DNA or RNA
  - c) RNA
  - d) Both DNA and RNA

P.T.O.



- 9) \_\_\_\_\_ is invagination of cell membrane.  
a) Mesosomes      b) Pili      c) Capsule      d) Cell wall
- 10) \_\_\_\_\_ are Saprophytic.  
a) Viruses      b) Algae      c) Fungi      d) Yeast

2. Answer **any five** of the following : **10**
- a) What are pili ? Give its function.
  - b) Draw a neat labelled structure of bacteria.
  - c) What are actinomycetes ?
  - d) Write contribution of Robert Kitch.
  - e) Define sterilization.
  - f) Give two harmful activities of bacteria.
3. A) Answer the following questions (**any two**) : **6**
- 1) Describe applies areas of microbiology.
  - 2) Structural features of viruses.
  - 3) Write down the salient features of fungi.
- B) Discuss in brief nutritional classification of bacteria based on carbon and energy source. **4**
4. Answer **any two** of the following : **10**
- A) Comment on different shapes and arrangement of bacteria.
  - B) Give contribution of Louis Pasteur.
  - C) Discuss the role of cell membrane in bacteria.
5. Answer **any one** of the following : **10**
- I) Compare and contrast between “Prokaryotic and eucaryotic micro-organisms.
  - II) What is sterilization ? List out the instruments used for sterilization and add a note on its principle and working.
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**B.Sc. I (Semester – I) (Entrepreneurship) Examination, 2014**  
**INDUSTRIAL MICROBIOLOGY (Old)**  
**Paper – II : Basic Techniques in Microbiology**

Day and Date : Tuesday, 11-11-2014

Max.Marks : 50

Time : 3.00 p.m. to 5.00 p.m.

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

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

10

- 1) Gram staining is the example of \_\_\_\_\_ staining.  
a) Simple                      b) Differential    c) Negative        d) Absolute
- 2) \_\_\_\_\_ is an example of living media.  
a) Nutrient agar                      b) Mac Conkey's agar  
c) Embryonated eggs                      d) Nutrient broth
- 3) Mycobacterium species can be identified by using \_\_\_\_\_  
a) Gram staining                      b) Albert staining  
c) Acid fast staining                      d) Monochrome staining
- 4) \_\_\_\_\_ is used as a decolourising agent in Gram staining.  
a) Iodine                                      b) Crystal violet  
c) Alcohol                                      d) Safranin
- 5) Major component present mostly in the cell wall of Gram positive bacteria \_\_\_\_\_  
a) Phospholipid                                      b) Lipoprotein  
c) Peptidoglycan                                      d) None of these
- 6) Mannitol salt agar is selective medium for \_\_\_\_\_  
a) E. Coli                                      b) Pseudomonas species  
c) Staphylococcus aureus                                      d) Bacillus

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**B.Sc. – I (Semester – I) Examination, 2014**  
**ENTREPRENEURSHIP (Old)**  
**Industrial Biotechnology (Paper – I) (Cell Biology)**

Day and Date : Wednesday, 12-11-2014  
Time : 3.00 p.m. to 5.00 p.m.

Max. Marks : 50

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

1. Rewrite the sentence by choosing correct alternative : 10
- 1) \_\_\_\_\_ is called as power house of cell.  
a) Ribosome      b) Mitochondria      c) Lysosome      d) Golgi body
  - 2) Photosynthesis is carried out by \_\_\_\_\_ cell organelles.  
a) Mitochondria      b) Chloroplast      c) Ribosome      d) Lysosome
  - 3) Microtubule is made up of protein  
a) Tubulin      b) Actin      c) Globulin      d) Keratin
  - 4) Double helical structure of DNA was discovered by  
a) Robert Brown      b) Griffith  
c) Watson and Crick      d) Robert Hook
  - 5) Crossing over take place during \_\_\_\_\_ phase.  
a) Zygotene      b) Diplotene      c) Pachytene      d) Leptotene
  - 6) The chromosome having centromere at the centre is called as \_\_\_\_\_ chromosome.  
a) Acrocentric      b) Metacentric  
c) Telocentric      d) Sub-metacentric
  - 7) \_\_\_\_\_ transport depends on metabolic energy.  
a) Active      b) Passive  
c) Faciliated      d) Simple diffusion



8) DNA contain \_\_\_\_\_ sugar.

- a) Hexose                      b) Glucose                      c) Deoxyribose                      d) Ribose

9) \_\_\_\_\_ is initiation codon.

- a) UAA                      b) UAG                      c) AUG                      d) UGA

10) Reductional cell division occur in

- a) Mitosis                      b) Meiosis                      c) Amitosis                      d) All of above

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

- 1) Give formulation of cell theory.
- 2) Difference between plant cell and animal cell.
- 3) Give functions of cell wall.
- 4) Draw neat labelled diagram of chloroplast.
- 5) Features of mitosis.
- 6) Describe Golgi body.

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

- 1) Draw neat labelled diagram of plant cell and give characters.
- 2) Give functions of cell wall.
- 3) Define Meiosis and enlist their stages.

B) Explain in detail structure and function of Mitochondria. **4**

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

- 1) Give characters of eukaryotic cell.
- 2) Explain types of RNA.
- 3) Explain euchromatin and heterochromatin.

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

- 1) Explain double helical structure of DNA.
  - 2) Explain in detail active transport.
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**B.Sc. – I (Semester – I) Examination, 2014**  
**ENTREPRENEURSHIP**  
**Industrial Biotechnology – II (Old)**  
**(Animal and Plant Physiology)**

Day and Date : Thursday, 13-11-2014

Max. Marks : 50

Time : 3.00 p.m. to 5.00 p.m.

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

1. Rewrite the sentence by choosing correct alternative. 10
- 1) A group of cells having similar origin, more or less similar size and shape and function are called as  
a) Prokaryotic cell    b) Eukaryotic cell    c) Tissue    d) Nerve cell
  - 2) Stratified squamous epithelium occurs in  
a) Stomach    b) Trachea    c) Pharynx    d) Intestine
  - 3) Dark reaction of photosynthesis occurs in  
a) Stroma    b) Cytoplasm  
c) Grana    d) None of above
  - 4) The first stable product in the  $C_3$  pathway is  
a) Phosphoglycerate    b) Malate  
c) Glucose    d) Pyruvate
  - 5) Straited muscles are found in  
a) Gall bladder    b) Leg muscles    c) Wall of bronchi    d) Lungs
  - 6) The oesophagus is a \_\_\_\_\_ long tube.  
a) 20 – 22    b) 23 – 25    c) 22 – 24    d) 25 – 27
  - 7) The pancreas produce \_\_\_\_\_ hormones.  
a) Insulin    b) Insulin and glucagon  
c) Glucagon    d) None of above



- 8)  $C_4$  plants exhibit \_\_\_\_\_ type of leaf anatomy.
- a) Kranz
  - b) Rowshaped
  - c) Oval
  - d) None of above
- 9)  $\beta$ - cell secrete \_\_\_\_\_ hormone.
- a) Glucagon
  - b) Insulin
  - c) Somatostatin
  - d) None of above
- 10) \_\_\_\_\_ cells give mechanical support to the sperms.
- a) Leydig cells
  - b) Spermatogonia
  - c) Spermatids
  - d) Sertoli cells

2. Answer **any five** of the following : 10
- a) Significance of photosynthesis.
  - b) Squamous epithelium.
  - c) Types of cartilage.
  - d) Functions of connective tissue.
  - e) Serous cell.
  - f) Graffian follicles.
3. A) Answer **any two** of the following : 6
- 1) Write a short note on photosystem.
  - 2) Columnar epithelium.
  - 3) Application of plant tissue culture.
- B) Explain histology of tooth. 4
4. Answer **any two** of the following : 10
- 1) Describe origin, structure, location and function of muscular tissue.
  - 2) Describe physiology of stomach.
  - 3) Explain  $C_4$  pathway.
5. Answer **any one** of the following : 10
- 1) Explain simple epithelial tissue.
  - 2) Explain Calvin cycle.
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**B.Sc. – I (Semester – II) (New) Examination, 2014**  
**ENTREPRENEURSHIP**  
**Cost Accounting and Project Management**  
**(Paper – IV)**

Day and Date : Monday, 1-12-2014  
Time : 11.00 a.m. to 1.00 p.m.

Max. Marks : 50

1. Choose the correct answer from given alternative : 10

- i) Contract costing used in
  - a) Service Industry
  - b) Construction Industry
  - c) Hotel Industry
  - d) All of the above
- ii) Hotel Industry use
  - a) Service Industry
  - b) Operation Industry
  - c) a) and b)
  - d) None of these
- iii) LSI denote for
  - a) Large Scale Industry
  - b) Low Standard Industry
  - c) Both a) and b)
  - d) None of these
- iv) The basic objective of cost accounting is
  - a) Recording of Cost
  - b) Reporting of Cost
  - c) Cost Control
  - d) Profit earning
- v) Conversion cost excludes
  - a) Direct material cost
  - b) Direct labour cost
  - c) Direct expenses
  - d) All the above
- vi) Imputed cost is a
  - a) Differential Cost
  - b) Fixed Cost
  - c) Variable Cost
  - d) National Cost
- vii) Job costing used in
  - a) Unique Production
  - b) Universal Production
  - c) Both a) and b)
  - d) None of these
- viii) JCS stands for
  - a) Job Cost Sheet
  - b) Job Cost Style
  - c) Job Cost Source
  - d) None of these

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- ix) Sales =  
a) Cost of sales + Profit  
c) Total Cost – Profit
- x) CA stands for  
a) Cost Accounting  
c) Cash Accounting
- b) Cost – Profit  
d) None of these
- b) Chartered Accountant  
d) None of these

2. Answer **any five** of the following : **10**
- i) Job Costing
  - ii) Define Indirect Cost
  - iii) Define price value
  - iv) Define project
  - v) Define market potential
  - vi) SSI stands for
3. A) Answer **any two** of the following : **6**
- i) Explain project selection process.
  - ii) Explain elements of cost.
  - iii) Explain direct and indirect expenses.
- B) Describe in short : **4**  
Explain types of cost.
4. Answer **any two** of the following : **10**
- i) Calculate National Profit.  
Contract Price 4,00,000  
Work Certified 2,50,000  
Cash Received 1,70,000  
Expenditure to till date 2, 90,000.
  - ii) Difference between cost, financial and managers accounting.
  - iii) Explain the problem of SSI.
5. Answer **any two** of the following : **10**
- i) Explain the Project Management.
  - ii) Explain the classification of costing method.
  - iii) Explain the concept and object of cost accounting.
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**B.Sc. – I (Semester – II) (Entrepreneurship) Examination, 2014  
INDUSTRIAL MICROBIOLOGY (Paper – III) (New)  
Fundamentals of Microbiology**

Day and Date : Thursday, 4-12-2014

Max.Marks : 50

Time : 11.00 a.m. to 1.00 p.m.

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

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

10

- 1) In fermentation process \_\_\_\_\_ prevent vortex formation.  
a) Impeller                      b) Baffles                      c) Sparger                      d) Antifoam agent
- 2) Phenyl acetic acid used as precursor in the production of \_\_\_\_\_  
a) Penicillin G                      b) Acetic acid  
c) Vitamin                      d) Citric acid
- 3) In fermentation process agitation of the medium is done by using \_\_\_\_\_  
a) sparger                      b) Baffle  
c) Antifoam agent                      d) Impeller
- 4) AISI 316 steel which contain \_\_\_\_\_% chromium.  
a) 10                      b) 18                      c) 70                      d) 25
- 5) Secondary metabolite are produced in \_\_\_\_\_ phase.  
a) Idio                      b) Lag                      c) Log                      d) None
- 6) \_\_\_\_\_ is an organic nitrogen source present in fermentation media.  
a) Molasses                      b) Corn steep liquor  
c) Urea                      d) None
- 7) Antibiotic producing organism is screened out by using \_\_\_\_\_ plate technique.  
a) Streak                      b) Pour                      c) Crowded                      d) None



8) \_\_\_\_\_ is used for screening of organic acid producing organism.

- a) Calcium carbonate                      b) Sodium chloride  
c) Peptone                                      d) Beef extract

9) Stock culture is maintained by \_\_\_\_\_

- a) Sterilization                                b) Pasteurization  
c) Tyndallization                              d) Lyophilization

10) \_\_\_\_\_ is used as a antifoam agent

- a) NaCl                      b) Oils                      c) Acids                      d) None

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

- 1) Define screening.
- 2) Write application of fermenter.
- 3) Enlist the example of antifoam agent.
- 4) Define lyophilization.
- 5) Enlist the factors affecting on fermentation process.
- 6) Draw a neat labelled diagram of fermenter.

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

- 1) Screening of antibiotic producing organism.
- 2) Explain secondary screening.
- 3) Explain scope of industrial microbiology.

B) Carbon and nitrogen source in fermentation media. **4**

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

- 1) Explain in detail different methods of media sterilization.
- 2) Write in detail factors involved in fermentation process.
- 3) Describe in detail history and scope of industrial microbiology.

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

- 1) Describe in detail construction and working of fermenter.
  - 2) Explain in detail-fermentation media.
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**B.Sc. – I (Semester – II) (New) Entrepreneurship Examination, 2014**  
**INDUSTRIAL MICROBIOLOGY (Paper – IV)**  
**Basic Techniques in Microbiology**

Day and Date : Friday, 5-12-2014

Max. Marks : 50

Time : 11.00 a.m. to 1.00 p.m.

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

2) *Draw a neat labelled diagram wherever necessary.*

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

1. Rewrite the following sentences by selecting correct answer from given alternative. **10**

1) The quantity of inoculums normally used between \_\_\_\_\_ % of the medium volume.

- a) 10 – 15                      b) 3 – 10                      c) 20 – 25                      d) 1 – 2

2) \_\_\_\_\_ is used for in computer application in fermentation technology to convert ADC to DAC.

- a) Interface                      b) Clock                      c) Meter                      d) None

3) Penicillin technique is used for selection of particular

- a) Prototroph                      b) Phototroph  
c) Chemotroph                      d) Auxotroph

4) \_\_\_\_\_ % cost is require for recovery and purification of enzymes.

- a) 40                      b) 60                      c) 70                      d) 80

5) Distillation is mainly used for recovery of

- a) Enzymes                      b) Alcohol                      c) Vitamin                      d) Acids

6) Mainly stock culture is maintained by

- a) Lyophilization                      b) Soil  
c) Milk powder                      d) Water

7) Diffusion assay is an example of \_\_\_\_\_ assay.

- a) Chemical                      b) Biological  
c) Enzymatic                      d) None of above



- 8) In down stream processing, crystallization of citric acid is carried by using  
a)  $\text{Ca}(\text{OH})_2$                       b) NaCl                      c) NaOH                      d) HCl
- 9) \_\_\_\_\_ test organism used for penicillin antibiotic assay.  
a) E.Coli                      b) Pseudomonas                      c) S.aureus                      d) None
- 10) \_\_\_\_\_ is an example of batch filtration.  
a) Rotary vacuum                      b) HEPA  
c) Metafilter                      d) Plate and frame

2. Answer **any five** of the following : **10**
- 1) Distillation.
  - 2) Diffusion assay.
  - 3) Preparation of bacterial inoculum.
  - 4) Define strain improvement and give methods of strain improvement.
  - 5) Define assay and give types of assay.
  - 6) Crystallization.
3. A) Answer **any two** of the following : **6**
- 1) Write a note on enzymatic assay.
  - 2) Explain site directed mutagenesis.
  - 3) Explain methods for isolation of auxotrophic mutant.
- B) Write a note on scale up. **4**
4. Answer **any two** of the following : **10**
- 1) Describe in detail control of fermentain process by computer.
  - 2) Explain in detail microbial assay.
  - 3) Describe in detail development of inoculum.
5. Answer **any one** of the following : **10**
- 1) Write an essay on strain improvement.
  - 2) Explain in detail down stream processing.
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**B.Sc. I (Sem. – I) Examination, 2014  
ENTREPRENEURSHIP (Old) Paper – II  
Economics for Manager and Managerial Accounting**

Day and Date : Wednesday, 5-11-2014

Max.Marks : 50

Time : 3.00 p.m. to 5.00 p.m.

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

1. Rewrite the following sentences by choosing correct alternative : **10**

- 1) Gross profit = \_\_\_\_\_
  - a) Net sales and cost of goods sold
  - b) Cost of goods sold and net sales
  - c) Both a) and b)
  - d) None of these
- 2) Trading account shows \_\_\_\_\_
  - a) Net profit
  - b) Net loss
  - c) Gross profit
  - d) Surplus
- 3) \_\_\_\_\_ means reduction in the value of fixed assets.
  - a) Profit
  - b) Depreciation
  - c) Loss
  - d) Surplus
- 4) Advertisement recorded on \_\_\_\_\_ side of \_\_\_\_\_ account.
  - a) Debit and trading
  - b) Asset and trading
  - c) Credit and profit and loss
  - d) Debit and profit and loss
- 5) Debit what comes in, credit what goes out is the rule of \_\_\_\_\_ account.
  - a) Personal
  - b) Impersonal
  - c) Real
  - d) Nominal



6) Monopoly and oligopoly are often referred to as \_\_\_\_\_ competition.

- a) Perfect
- b) Elastic
- c) Imperfect
- d) Monopolistic

7) In \_\_\_\_\_ type of firm there is single seller.

- a) Monopoly
- b) Oligopoly
- c) Perfect competition
- d) None of these

8) In \_\_\_\_\_ market the product is homogeneous.

- a) Perfect competition
- b) Imperfect competition
- c) Monopoly
- d) Oligopoly

9) \_\_\_\_\_ refers to the transformation of inputs into outputs.

- a) Production
- b) Demand
- c) Supply
- d) None of these

10) \_\_\_\_\_ inputs are those that cannot be changed during specific time period.

- a) Variable
- b) Fixed
- c) Semi fixed
- d) Semi variable

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

**10**

- 1) What is balance sheet ?
- 2) What is meant by personal account ?
- 3) Define monopoly.
- 4) Define oligopoly.
- 5) Rule of nominal account.
- 6) What is meant by demand analysis ?

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

**6**

- 1) Write short note on production function.
- 2) Write short note on perfect competition.
- 3) Write steps of preparation of final account.

B) What are the sources of financial information ?

**4**



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

10

1) Journalise the following transactions :

- a) Mr. A started business with cash Rs. 30,000 and Bank Rs. 20,000
- b) Purchase furniture worth Rs. 50,000
- c) Purchase goods on credit worth Rs. 50,000 from Mr. B
- d) Sold goods to Mr. C worth Rs. 30,000
- e) Sold goods Rs. 20,000.

2) Write internal and external sources of finance.

3) Define accounting and explain the nature and scope of accounting.

5. Answer **any one** of the following :

10

1) Prepare Balance Sheet as on 31-03-2010 from the following information :

<b>Particulars</b>	<b>Rs.</b>
Land and building	50,000
Plant and machinery	20,000
Furniture	30,000
Capital	1,20,000
Drawings	20,000
Loan from bank	50,000
Sundry debtors	40,000
Cash in hand	50,000
Cash at bank	20,000
Sundry creditors	40,000
Unsecured loan	50,000
Reserve and surplus	20,000
Investment	50,000
Outstanding wages	15,000
Closing stock	15,000

2) Explain in detail demand analysis and its objectives.

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**B.Sc. I (Semester – I) Entrepreneurship Examination, 2014**  
**INDUSTRIAL CHEMISTRY**  
**Fundamentals of Inorganic Chemistry (Paper – I) (Old)**

Day and Date : Friday, 7-11-2014

Max. Marks : 50

Time : 3.00 p.m. to 5.00 p.m.

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

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

1. Select the most correct alternative for each of the following and rewrite the sentences.

10

1) Atomic orbitals are

- a) Polycentric      b) Monocentric      c) Bicentric      d) Tricentric

2) Gillespie and Nyholm proposed \_\_\_\_\_ theory.

- a) VSEPR      b) VBT      c) MOT      d) CFT

3) Limiting radius ratio for square planer geometry is

- a) 0.225      b) 0.732      c) 0.175      d) 0.414

4) BOD is expressed in

- a)  $\text{kg/dm}^3$       b) g/L      c)  $\text{mg/dm}^3$       d) kg/L

5) dB is the unit used to measure \_\_\_\_\_ intensity.

- a) Light      b) Sound      c) Volume      d) None

6) Ionic compounds in liquid state are \_\_\_\_\_ of electricity.

- a) Good conductors      b) Bad conductors  
c) Semiconductors      d) None of these

7) Antibonding molecular orbitals are at

- a) Same energy levels      b) Higher energy levels  
c) Lower energy levels      d) Middle energy levels

8)  $\text{SP}^3\text{d}$  hybridisation is observed in \_\_\_\_\_ molecule.

- a)  $\text{SF}_6$       b)  $\text{NH}_3$       c)  $\text{PCl}_5$       d)  $\text{BeCl}_2$

P.T.O.



- 9) Acid rain is caused due to
- |                                   |                          |
|-----------------------------------|--------------------------|
| a) Oxides of nitrogen and sulphur | b) Oxides of carbon only |
| c) Oxides of nitrogen             | d) Oxides of silicon     |
- 10) As the bond order increases stability goes on
- |              |                 |
|--------------|-----------------|
| a) Decreases | b) Remains same |
| c) Increases | d) All of these |

2. Answer **any five** of the following : 10
- What is meant by covalent bond ?
  - Explain in brief solubility of ionic solids.
  - Draw MO diagram of  $H_2$  molecule.
  - Draw the crystal structure of CsCl.
  - What is an environment ?
  - Define air pollutants with suitable example.
3. A) Answer **any two** of the following : 6
- Discuss the stability of lithium molecule with the MO diagram.
  - Discuss the types of air pollutants.
  - What is coordinate bond ? How it is formed ?
- B) Calculate the limiting radius ratio for octahedral geometry. 4
4. Answer **any two** of the following : 10
- Differentiate between bonding and antibonding molecular orbitals.
  - Explain the formation of ionic bond.
  - Discuss hardness and alkalinity of water.
5. Write the short notes on **any two** : 10
- Toxic effects of oxides of carbon.
  - Need of hybridisation.
  - Born-Haber cycle for NaCl.
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Seat No.	
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**B.Sc. – I (Semester – I) (Entrepreneurship) (CGPA Pattern)  
Examination, 2014  
ENGLISH (Compulsory)  
'On Track' English Skills for Success**

Day and Date : Saturday, 1-11-2014  
Time : 3.00 p.m. to 6.00 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  
**each :**

14

- 1) The story, 'After Twenty Years' implies that 'Silky' Bob is a \_\_\_\_\_
  - a) Police Officer
  - b) Gangster or Criminal
  - c) Restaurant owner
  - d) Private detector
- 2) The policeman on the beat moved up the avenue \_\_\_\_\_
  - a) impressively
  - b) nervously
  - c) unwillingly
  - d) lazily
- 3) The narrator and Miss Krishna first met at \_\_\_\_\_
  - a) a mall
  - b) a restaurant
  - c) a circus
  - d) an exhibition
- 4) The word 'intelligence' is derived from the Latin word \_\_\_\_\_
  - a) intellectual
  - b) intellect
  - c) intellegere
  - d) none of the above
- 5) Mrs. Lall thought that one cup in her set was broken by \_\_\_\_\_
  - a) the cook
  - b) the maid
  - c) herself
  - d) her daughter
- 6) Mr. Binet was the \_\_\_\_\_ who developed IQ Test.
  - a) Philosopher
  - b) Psychologist
  - c) Mathematician
  - d) Physicist



- 7) The phrase 'shining loads' means \_\_\_\_\_
- a) an unmarried woman's wrist
  - b) bunches of bangles
  - c) the flame of marriage fire
  - d) sunlit corn
- 8) In 'Bangle Sellers' the speaker is a \_\_\_\_\_
- a) middle aged woman
  - b) young unmarried woman
  - c) bangle customer
  - d) bangle seller
- 9) The poem 'An Irish Airman Foresees His Death' relates to \_\_\_\_\_
- a) the plight of Irish soldiers fighting for UK
  - b) the glory of war
  - c) common man's attitude to war
  - d) the importance of peace
- 10) I don't believe \_\_\_\_\_ superstitions.
- a) on
  - b) with
  - c) in
  - d) upon
- 11) A man is known by \_\_\_\_\_ company he keeps.
- a) a
  - b) the
  - c) an
  - d) none of the above
- 12) The winner team was honoured by the guest.  
The underlined words is a \_\_\_\_\_ noun.
- a) proper
  - b) common
  - c) collective
  - d) material
- 13) His clients are happy \_\_\_\_\_ Monty's work.
- a) for
  - b) after
  - c) on
  - d) with
- 14) Sarita cut \_\_\_\_\_ while chopping vegetables.
- a) herself
  - b) itself
  - c) himself
  - d) myself



2. Answer in brief **any seven** of the following questions : 14
- 1) Why does Jimmy send another policeman to arrest Bob ?
  - 2) What was the nickname for Bob that the plain clothes Policeman used ?
  - 3) What is the narrator's profession in 'The Connoisseur' ?
  - 4) What are the many facets of intelligence ?
  - 5) Why did the narrator consider Miss Krishna annoying guest ?
  - 6) What are the merits of artificial intelligence ?
  - 7) What are the bangles 'tokens' of ?
  - 8) Who is the speaker in the poem 'An Irish Airman Foresees His Death' ?
3. A) Write short notes on **any two** of the following : 8
- 1) The relationship between Bob and Jimmy.
  - 2) Miss Krishna's character.
  - 3) Etymological background of the word 'intelligence'.
- B) Answer **any three** of the following questions briefly : 6
- 1) What image of the bangle sellers at the temple fair do you gather from the poem ?
  - 2) How does the bangle seller enhance the quality of life of simple people and bring joy and colour to it ?
  - 3) What is the Speaker's attitude towards those that he fights against in the poem 'An Irish Airman Foresees His Death'.
  - 4) How does the Irish Airman imagine he will die ?
4. Write an essay on the topic 'The Problem of City Slums and Possible Humane Solutions'. 14

OR

Write paragraphs of **six to eight** sentences on **each** of the following :

- 1) Human values are timeless and eternal.
- 2) Solar energy.





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

14

One of our most difficult problems is what we call discipline, and it is really very complex. You see, society feels that it must control or discipline the citizen, shape his mind according to certain religious, social, moral and economic patterns.

Now, is discipline necessary at all ? Please listen carefully, don't immediately say 'yes' or 'no'. Most of us feel, especially while we are young, that there should be no discipline, that we should be allowed to do whatever we like, and we think and so on, has very little meaning without understanding the whole problem of discipline.

The keen athlete is disciplining himself all the time, is he not ? His joy in playing games and the very necessity to keep fit makes him go to bed early, refrain from smoking, eat the right food and generally observe the rules of good health. His discipline is not an imposition or a conflict, but a natural outcome of his enjoyment of athletics.

Now does discipline increase or decrease human energy ? Human beings throughout the world, in every religion, in every school of philosophy, impose discipline on the mind, which implies control, resistance, adjustment, suppression : and is all this necessary ? If discipline brings about a greater output of human energy, then it is worthwhile, then it has meaning; but if it merely suppresses human energy ; it is very harmful, destructive. All of us have energy and the question is whether that energy through discipline can be made vital, rich and abundant, or whether discipline is allowed to destroy whatever energy we have. I think this is the central issue.

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Seat  
No.

**B.Sc. – I (Semester – I) (Entrepreneurship) Examination, 2014**  
**INDUSTRIAL CHEMISTRY (Paper – II) (Old)**  
**Fundamental of Organic Chemistry**

Day and Date : Saturday, 8-11-2014

Total Marks : 50

Time : 3.00 p.m. to 5.00 p.m.

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

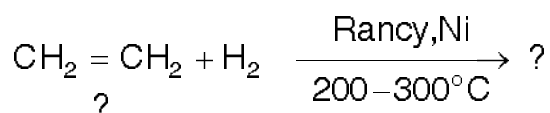
1. Rewrite the following sentences by selecting correct answer from given alternatives. 10
- 1) Internal Wurtz reaction is used to prepare \_\_\_\_\_  
a) cycloalkane      b) alkane      c) alkene      d) alkyne
  - 2) Aromatic compound burns with \_\_\_\_\_  
a) non sooty flame    b) green flame    c) sooty flame    d) none of these
  - 3) Fusion of sodium with aniline gives \_\_\_\_\_  
a) NaX                  b) NaCN            c) Na<sub>2</sub>S              d) NaCNS
  - 4) \_\_\_\_\_ drug is used to lower body temperature.  
a) antipyretics                  b) antiallergic  
c) anticonvulsants              d) anti-inflammatory
  - 5) Chromophore – auxochrome theory is also known as \_\_\_\_\_ theory.  
a) Witt's                          b) Molecular orbital  
c) Valence bond                  d) Antibonding molecular orbital
  - 6) General formula for alkene is \_\_\_\_\_  
a) C<sub>n</sub>H<sub>2n+2</sub>                  b) C<sub>n</sub>H<sub>2n-2</sub>              c) C<sub>n</sub>H<sub>2n</sub>              d) C<sub>n</sub>H<sub>n</sub>
  - 7) All the carbon atoms in benzene are \_\_\_\_\_ hybridised.  
a) sp                              b) sp<sup>3</sup>                  c) d<sup>2</sup>sp<sup>3</sup>              d) sp<sup>2</sup>
  - 8) Carius method is used for estimation of \_\_\_\_\_  
a) Nitrogen                      b) Nitrogen and sulphur  
c) Halogen                        d) Carbon and hydrogen
  - 9) When alcohol reacts with H<sub>2</sub>SO<sub>4</sub>, H<sub>2</sub>SO<sub>4</sub> is used as \_\_\_\_\_  
a) oxidising agent    b) reducing agent    c) solvent              d) dehydrating agent
  - 10) Azo dyes contain \_\_\_\_\_ functional group.  
a) –N=N–                  b) –N=O              c) –N–NO<sub>2</sub>            d) –N–OH

P.T.O.



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

- 1) State and explain Huckel's rule.
- 2) Explain Wurtz reaction.
- 3) Draw neat labelled diagram for detection of carbon and hydrogen by combustion method.
- 4) Define chromophore and auxochrome.
- 5) Define hypnotics, give its example.
- 6) Complete the following reaction



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

- 1) What is the action of following on cyclopropane :
  - i) HBr
  - ii)  $\text{H}_2/\text{Ni}$
  - iii) Chlorine in presence of sunlight.
- 2) Why electrophilic attack takes place on benzene ring ?
- 3)  $5.15 \times 10^{-4}$  kg of organic compound gave  $6.3 \times 10^{-4}$  kg of barium sulphate in carius method. Calculate percentage of sulphur in the compound.

B) Write short note on classification of dienes. 4

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

- 1) Explain acidity of alkynes.
- 2) What is meant by sulphonation ? Give its mechanism.
- 3) How will you detect molecular weight of base by platinichloride method ?

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

- 1) Explain mechanism of free radical halogenation of alkane.
- 2) What are the qualities of good dye ?
- 3) How will you estimate nitrogen in organic compound by Kjeldahl's method ?

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Seat No.	
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**B.Sc. – I (Semester – II) (Entrepreneurship) (New) Examination, 2014**  
**ENGLISH (Compulsory)**  
**On Track : English Skills for Success**

Day and Date : Friday, 28-11-2014  
Time : 11.00 a.m. to 1.00 p.m.

Max. Marks : 50

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

1. Rewrite the following sentences by choosing the correct alternative : **10**
- 1) The \_\_\_\_\_ missile was the first greatest single achievement in the history of rockets and missiles.  
a) V – 1  
b) V – 2  
c) V – 3  
d) V – 4
  - 2) The Parliament of Religion was to be held in \_\_\_\_\_  
a) South Africa  
b) Singapore  
c) Canada  
d) America
  - 3) Vivekananda represented Hinduism as \_\_\_\_\_  
a) The mother of religions  
b) The father of religions  
c) The sister of religions  
d) The brother of religions
  - 4) The primary idea of human rights involves \_\_\_\_\_  
a) Rights of the Govt.  
b) Rights for the Govt.  
c) Rights formulated by the Govt.  
d) Rights to operate against Govt.
  - 5) In the Zoo at Lusaka, there is a cage where the notice reads, "The worlds most dangerous animal." Inside the cage there is \_\_\_\_\_  
a) A crocadle  
b) A leopard  
c) No any one but a mirror  
d) An anaconda
  - 6) According to Emerson Shadow and \_\_\_\_\_ are the same.  
a) Moon light  
b) Sun light  
c) Twilight  
d) Dark night
  - 7) \_\_\_\_\_ challenge the sacred identify of the moon.  
a) The Children  
b) Mothers  
c) Astronomers  
d) Rocket experts



8) I met my friend John and gave \_\_\_\_\_ the invitation card.

- a) him                      b) his                      c) her                      d) its

9) Mount Everest is the \_\_\_\_\_ mountain in the World.

- a) higher                      b) highest                      c) high                      d) highly

10) Ajay and Vijay finished \_\_\_\_\_ work and went home.

- a) their                      b) his                      c) her                      d) its

2. Answer **any five** of the following questions in **two** or **three** sentences **each** :      **10**

- i) What is Dr. Kalams attitude towards work culture ?
- ii) What does Dr. Kalam mean by 'flow' in the essay work bring solace ?
- iii) How did Vivekananda greet the people in the Parliament of Religions ?
- iv) Why was Vivekananda not prepared for weather conditions in Chicago ?
- v) What was the motivating Slogan behind the American Civil-War ?
- vi) What do you understand by human rights ?

3. A) Answer **any two** of the following questions in **2** to **3** sentences **each** :      **6**

- i) Who are the Watchers of the moon ? What happened to them ?
- ii) What is the origin or background of the poem 'Brahma' ?
- iii) Examine the theme of innocence verses experience in the poem 'Full Moon'.

B) Answer **any two** of the following questions briefly :      **4**

- i) What are the important features of notices ?
- ii) What is the CV ? How is it important in the letter of Application ?
- iii) As a Secretary of Science Association prepare an 'agenda' for its inauguration function ?

4. A) You are Prashant Kumar living at 44, Golden Residency, Shivaji Nagar, Pune, you have just received a letter of appointment as Assistant Executive in the accounts department of Samartha Industries, 151, Shubhan Complex, M.G. Road Bengaluru. The letter is dated 10<sup>th</sup> October 2014 and the sender is Mr. Ajaykumar, the General Manager, Draft e-mail with this effect.      **10**

OR

B) Imagine that you have received an e-mail of appointment as a sales executive by Parimal Book Publishers, Kanpur. Write an e-mail accepting the appointment.

5. Prepare a C.V. of your friend who is employed as a Bank Manager in a reputed Bank.      **10**



Seat No.	
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**B.Sc. – I (Semester – II) Examination, 2014**  
**Entrepreneurship (Paper – III) (New)**  
**PRINCIPLES OF MARKETING AND MANAGEMENT ACCOUNTING**

Day and Date : Saturday, 29-11-2014

Max. Marks : 50

Time : 11.00 a.m. to 1.00 p.m.

1. Choose the correct answer from given alternatives : **10**
- i) Managerial accounting information is generally prepared for
    - a) Shareholder
    - b) Creditors
    - c) Manager
    - d) Regulatory agencies
  - ii) CRM stands for
    - a) Country Relationship management
    - b) Customer Relationship Management
    - c) Customer Retail Management
    - d) None of these
  - iii) MR stands for
    - a) Marketing Resource
    - b) Marketing Research
    - c) Management Research
    - d) Marketing Record
  - iv) \_\_\_\_\_ is at the heart of all transaction.
    - a) Money
    - b) Relation
    - c) Exchange
    - d) None of these
  - v) Management accounting is applicable to
    - a) Service entities
    - b) Manufacturing entities
    - c) Not-for profit entities
    - d) All of these
  - vi) Internal reports are generally
    - a) Aggregated
    - b) Detailed
    - c) Regulated
    - d) Unreliable
  - vii) \_\_\_\_\_ is characteristic of good marketing information.
    - a) Relevance
    - b) Money
    - c) Speed
    - d) Time

P.T.O.



- viii) Which of the following is not a management function ?  
a) Demotivating    b) Planning                      c) Controlling    d) Directing
- ix) Management accounting reports can be described as  
a) General purpose                                      b) Macro reports  
c) Special purpose                                      d) None of these
- x) Both direct materials and indirect materials are classified as  
a) Raw material    b) Non-current Assets  
c) Manufacturing overheads                              d) Product

2. Answer **any five** of the following : **10**
- i) Define market.
  - ii) Define environment.
  - iii) What is meant by current ratio ?
  - iv) GPR stands for.
  - v) What is meant by account ?
  - vi) What is meant by management ?
3. A) Answer **any two** of the following : **6**
- i) State why marketing is important ?
  - ii) Explain the concept of market segmentation ?
  - iii) Explain types of A/c and Rules of account.
- B) Describe in short working capital. **4**
4. Answer **any two** of the following : **10**
- i) Define marketing research. Explain the importance of marketing research.
  - ii) Discuss customer value and satisfaction.
  - iii) Write down advantages of segmentation.
5. Answer **any two** of the following : **10**
- i) Explain the concept marketing.
  - ii) Write down advantages of marketing research,
  - iii) Explain the nature and scope of management account.
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**B.Sc. – I (Semester – II) (Entrepreneurship) Examination, 2014**  
**Industrial Chemistry (Paper – III)**  
**FUNDAMENTALS OF PHYSICAL CHEMISTRY (New)**

Day and Date : Tuesday, 2-12-2014  
Time : 11.00 a.m. to 1.00 p.m.

Max. Marks : 50

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

1. Select most correct alternative : **10**
- 1) The ratio of weight of substance to its molecular weight is called as
    - a) number of gram equivalent
    - b) number of moles
    - c) ppm
    - d) normality
  - 2) Mole fraction is denoted by symbol
    - a) n
    - b) M
    - c) N
    - d) X
  - 3) Rate of reaction depends upon
    - a) Temperature
    - b) Pressure
    - c) Catalyst
    - d) All of these
  - 4)  $\text{H}_{2(g)} + \text{Cl}_{2(g)} \xrightarrow{\text{light}} 2\text{HCl}_{(g)}$  is an example of \_\_\_\_\_ order reaction.
    - a) first
    - b) zero
    - c) second
    - d) third
  - 5) The minimum amount of energy required for the reactant molecule to get converted into product is called as
    - a) kinetic energy
    - b) potential energy
    - c) activation energy
    - d) electrical energy
  - 6) Reaction between  $\text{K}_2\text{S}_2\text{O}_8$  and KI is an example of \_\_\_\_\_ order reaction.
    - a) first
    - b) second
    - c) third
    - d) zero
  - 7)  $P_c, V_c, T_c$  are known as \_\_\_\_\_ constants.
    - a) critical
    - b) Van der Waal's
    - c) rate
    - d) all of these





- 8)  $\left(p + \frac{a}{v^2}\right)(v - b) = RT$  is known as \_\_\_\_\_ equation.  
 a) Van der Waal's    b) ideal gas    c) Nernst's    d) all of these
- 9) \_\_\_\_\_ is used to measure the surface tension.  
 a) Viscometer    b) Refractometer  
 c) Stalagmometer    d) All of these
- 10) Unit of viscosity as  
 a) kg    b) meter    c) poise    d) all of these

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

- 1) Define mole fraction and give its formula.
- 2) Define order of reaction and molecularity of reaction
- 3) Define rate of reaction and gives its unit.
- 4) Give the causes of deviation from ideal behavior.
- 5) Define coefficient of viscosity and give its unit.
- 6) Define surface tension of liquid and give its unit.

3. A) Attempt **any two** : 6

- 1) Define first order reaction and explain it with example.
- 2) Define liquifaction of gas and give the essential conditions for it.
- 3) Explain integration method for order determination.

B) Explain the parachor with the help of Macleod equation and Sudgen's modification. 4

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

- 1) Derive equation for rate constant of second order reaction at equal concentration of reactants.
- 2) Explain drop weight method for surface tension determination.
- 3)  $T_c$  and  $P_c$  for a gas are 154.4 K and  $5.131 \times 10^6 \text{ Nm}^{-2} \text{ mol}^{-2}$  respectively. Calculate values of Van der Waal's constants.  
 ( $R = 8.314 \text{ J k}^{-1} \text{ mol}^{-1}$ ).

5. Write short note on **any two** of the following : 10

- 1) Half change method.
- 2) Method for viscosity determination.
- 3) Explanation of real gas behavior by Van der Waal's equation.



Seat No.	
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**B.Sc. – I (Sem. – II) Entrepreneurship Examination, 2014**  
**INDUSTRIAL CHEMISTRY (Paper – IV) (New)**  
**Fundamentals of Analytical Chemistry**

Day and Date : Wednesday, 3-12-2014  
Time : 11.00 a.m. to 1.00 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 from **each** of the following : **10**
- 1) Hot reservoir represents
    - a) Sink
    - b) Source
    - c) Cold reservoir
    - d) None of these
  - 2) \_\_\_\_\_ is the best known vulcanising agent.
    - a) Phosphorus
    - b) Chlorine
    - c) Hydrogen
    - d) Sulphur
  - 3) In case of cyclic process,
    - a)  $q = -W$
    - b)  $q = \frac{1}{W}$
    - c)  $\Delta E = W$
    - d)  $q = W$
  - 4) The chief component of natural gas is
    - a) Ethylene
    - b) Ethyne
    - c) Propane
    - d) Methane
  - 5) \_\_\_\_\_ nutrient is taken up by plants from air.
    - a) Zinc
    - b) Phosphorus
    - c) Carbon as  $\text{CO}_2$
    - d) Sulphur
  - 6) A device that converts heat into work continuously is called
    - a) Heat engine
    - b) Carnot's cycle
    - c) Both a and b
    - d) None of these
  - 7) During the manufacturing of polyvinyl chloride, \_\_\_\_\_ monomer is used.
    - a) Vinyl chloride
    - b) Formaldehyde
    - c) Styrene
    - d) All of these
  - 8) Petroleum mainly contains
    - a) Aromatic hydrocarbons
    - b) Aliphatic hydrocarbons
    - c) Cyclo alkanes
    - d) Inorganic compounds



9) \_\_\_\_\_ inorganic compound is used as a medicine.

- a) cis-platin
- b) naphthalene
- c) benzene
- d) none of these

10) Gasoline is a mixture of

- a)  $C_6 - C_{11}$  alkanes
- b)  $C_3 - C_5$  alkanes
- c)  $C_7 - C_9$  alkanes
- d)  $C_{15} - C_{20}$  alkanes

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

10

- 1) Define - homogenous and heterogenous polymers.
- 2) What is heat capacity ?
- 3) Give the statement of second law of thermodynamics.
- 4) What is meant by adulteration of milk ?
- 5) What is meant by cracking of fuel ?
- 6) Define the term COD and BOD.

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

6

- 1) Explain the efficiency of Carnot's cycle.
- 2) Explain the reforming of fuel.
- 3) Explain – linear, branched and cross linked polymers.

B) What is Hess' law ? Explain the heat of decomposition.

4

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

10

- 1) How the adulteration of sugar, urea and starch can be detected ?
- 2) How will you synthesize teflon, buna - S and nylon 66 ?
- 3) Write a note on – octane number and flash point.

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

10

- 1) Write in detail Kirchhoff's equation.
  - 2) State and explain Carnot theorem.
  - 3) What are the types of water ? Explain the term fresh water.
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Seat No.	
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**B.Sc. – I (Semester – I) (CGPA Pattern) Examination, 2014**  
**ENTREPRENEURSHIP (Paper – I)**  
**Entrepreneurship and the World of Business**  
**Economics for Manager and Managerial Accounting**

Day and Date : Monday, 3-11-2014  
Time : 3.00 p.m. to 6.00 p.m.

Max. Marks : 70

- N. B. :**
- 1) **All questions are compulsory.**
  - 2) **Draw figure where it is necessary.**
  - 3) **Figure to right indicates full marks.**
  - 4) **Answer of the both Sections should be attempted in separate answer book.**
  - 5) **Each Section include three questions.**

SECTION – I

1. Rewrite the following statements choosing proper alternative : 5
- 1) The term entrepreneur was first used in \_\_\_\_\_ language.  
a) French            b) Greek            c) Latin            d) American
  - 2) The term motivation has derived from the word \_\_\_\_\_  
a) Motion            b) Motivate            c) Motive            d) None of these
  - 3) Entrepreneurship helps to reduce \_\_\_\_\_  
a) Conflict            b) Unemployment  
c) Wealth of distribution            d) None of these
  - 4) Adverse a \_\_\_\_\_ financial conditions can motivate and individual to set up a new venture.  
a) Favourable            b) Supportive  
c) High            d) None of these
  - 5) Background factor influences on \_\_\_\_\_ orientation of entrepreneur.  
a) Emotional            b) Mental  
c) Behavioural            d) None of these



2. Answer **any five** of the following questions : 10
- 1) Discuss in short barrier to entrepreneurship.
  - 2) How will you differentiate entrepreneur and entrepreneurship ?
  - 3) What is the meaning and objectives of business ?
  - 4) What is multinational business organization ?
  - 5) What is the importance of business ethics ?
  - 6) Differentiate entrepreneur V/s manager.
  - 7) What are the promotional measures for women entrepreneurship ?
3. A) Write short notes on **(any 2)** : 10
- I) Scope of entrepreneurship in India.
  - II) Entrepreneurship as process.
  - III) Joint sector and public sector
  - IV) HUF.
- B) Explain **(any 1)** : 10
- 1) Problem faced by women entrepreneurship.
  - 2) Characteristics of entrepreneur.

#### SECTION – II

1. Choose the correct answer from given alternative : 5
- 1) Financial statement is a part of \_\_\_\_\_
    - a) Book keeping
    - b) Debit
    - c) Accounting
    - d) None of these
  - 2) Machinery A/c shows \_\_\_\_\_ balance.
    - a) Debit
    - b) Credit
    - c) Positive
    - d) Negative
  - 3) Debtors A/c shows \_\_\_\_\_ balance.
    - a) Debit
    - b) Credit
    - c) Nominal
    - d) Real
  - 4) When supply of a commodity remains constant and does not change whatever may be the change in price, it is said to be \_\_\_\_\_
    - a) Perfectly elastic supply
    - b) Perfectly inelastic supply
    - c) Relatively elastic supply
    - d) Relatively inelastic supply



5) Suppose there is only one factory in a small town providing employment for labor in the area. And there is a trade union which controls the supply of labour in the factory. What kind of market situation it is ?

- a) Oligopoly
- b) Monopoly
- c) Bilateral monopoly
- d) None of these

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

- 1) The law to demand.
- 2) What is meant by market structure ?
- 3) Characteristics of perfect competition.
- 4) What is accounting?
- 5) Why is P and L account prepared ?
- 6) What is capital ?

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

- 1) Nature of managerial economics.
- 2) Demand analysis and its objective.
- 3) Journalize following transaction in the books of Mr. Bipin.

Sr. No.	Date	Particulars	Amt.
1	1 July 2011	Started business with cash	2,25,000
2	3 July 2011	Deposited in to Dena Bank	1,50,000
3	7 July 2011	Brought goods on credit from Manish	10,000
		@ 10% T.D.	
4	11 July 2011	Paid house rent	2500
5	13 July 2011	Wages paid	6,000

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

- 1) What is managerial economics ? and explain in detail the scope and nature of it.
  - 2) What is economic of scale ? Classified of internal economics and external economics.
-

Seat  
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**B.Sc. (Semester – II) (Entrepreneurship) Examination, 2014**  
**INDUSTRIAL BIOTECHNOLOGY (Paper – III)**  
**Basic Biomolecules (New)**

Day and Date : Saturday, 6-12-2014  
Time : 11.00 a.m. to 1.00 p.m.

Max. Marks : 50

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

1. Rewrite the following sentences by selecting appropriate alternative given below : **10**

- 1) Amylose and Amylopectin are polymeric units in the structure of  
a) Glycogen      b) Cellulose      c) Starch      d) Fructose
- 2) Serine and Threonine amino acid contain \_\_\_\_\_ functional groups.  
a) 'S'      b) – 'OH'      c) 'Mg'      d) 'Cl'
- 3) Water soluble vitamins are  
a) Vit. C      b) Vit. B<sub>12</sub>      c) Vit. B<sub>6</sub>      d) All of above
- 4) \_\_\_\_\_ is the region of enzyme which binds with substrate and converts it into the product.  
a) Regulatory site      b) Inhibitory site  
c) Allosteric site      d) Active site
- 5) Scurvy is caused due to the deficiency of  
a) Riboflavin      b) Ascorbic acid      c) Niacin      d) Biotin
- 6) Repeating patterns of  $\alpha$ -helix and  $\beta$ -pleated sheets are observed in \_\_\_\_\_ structure.  
a) Primary      b) Secondary      c) Tertiary      d) None
- 7) \_\_\_\_\_ is an aromatic amino acid.  
a) Glycine      b) Proline      c) Alanine      d) Tyrosine
- 8) \_\_\_\_\_ sugar present in the milk.  
a) Glucose      b) Fructose      c) Maltose      d) Lactose

P.T.O.



- 9) Fatty acid containing double bonds are \_\_\_\_\_ fatty acids.  
a) Unsaturated    b) Saturated    c) Derived    d) None
- 10) \_\_\_\_\_ is the most abundant and important steroid found in body.  
a) Phenol    b) Dettol    c) Cholesterol    d) Epinephrine

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

- 1) Write down role of vitamin D.
- 2) What are isoenzyme and give its example.
- 3) Enlist the name of water soluble vitamin.
- 4) Explain  $\alpha$ -helical structure of protein.
- 5) Properties of Monosaccharides.
- 6) Define lipids and give two example.

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

- 1) Give classes of steroid hormones and give its examples.
- 2) Explain in brief glycoprotein.
- 3) Define immobilization and give its types.

B) Define vitamin. Give its sources and function of water soluble vitamins. **4**

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

- 1) Describe in detail classification of enzyme.
- 2) Explain in detail tertiary and quaternary structure of protein.
- 3) Describe polysaccharide in detail.

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

- 1) Define hormones and give its classification.
  - 2) Describe the functions of lipids.
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**B.Sc. – I (Semester – II) Entrepreneurship (New) Examination, 2014  
INDUSTRIAL BIOTECHNOLOGY (Paper – IV)  
Basics of Metabolism**

Day and Date : Monday, 8-12-2014  
Time : 11.00 a.m. to 1.00 p.m.

Total Marks : 50

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

1. Rewrite the following sentences by selecting appropriate alternative given below : **10**

- 1) Glycolysis occurs in \_\_\_\_\_ of cell.  
a) Cytosol                      b) Mitochondria              c) Chloroplast              d) Nucleus
- 2) Kreb's cycle is discovered by  
a) Brown                      b) H. A. Kreb              c) Robert Hook              d) Mitchell
- 3) Citric acid cycle take place in  
a) Cytoplasm  
b) Mitochondrial matrix  
c) Nucleus  
d) Chloroplast
- 4) \_\_\_\_\_ is known as power house of cell.  
a) Mitochondria                      b) Chloroplast  
c) Endoplasmic Reticulum              d) Nucleus
- 5) Fluid Mosaic Model of cell membrane is discovered by  
a) Robertson                      b) Overton  
c) Griffith                      d) Singer and Nicolson
- 6) The process of removing environmental pollution by using microorganism is known as  
a) Bioremediation                      b) Biostimulation  
c) Biofermentation                      d) Heterotrophs

P.T.O.



7) \_\_\_\_\_ transport system require ATP as a energy source for transport across the membrane.

- a) Passive                      b) Active                      c) Diffusion                      d) Spleen

8) The organism producing their own food material are called as

- a) Heterotrophs                      b) Autotrophs                      c) Passive                      d) Diffusion

9) Gluconeogenesis occur in \_\_\_\_\_ organ.

- a) Heart                      b) Liver                      c) Stomach                      d) Spleen

10)  $\text{NADH} \xrightarrow{\otimes} \text{UQ} \longrightarrow \text{Cylb} \longrightarrow \text{Cy} + \text{Cl} \dots$

Which of the following inhibitor block the  $\text{NADH} \longrightarrow \text{UQ} ?$

- a) Rotenone                      b) Antimycin  
c) Rotenone and Antimycin                      d) Streptomycin

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

10

- 1) Draw the structure of mitochondria.
- 2) Define active and passive transport.
- 3) Draw a neat labelled diagram of biological membrane.
- 4) Define Biotransformation.
- 5) Explain the term phototrophs and chemotroph.
- 6) Give classification of transporters.

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

6

- 1) Give the difference between anabolism and catabolism.
- 2) Write down the roles of enzyme in biotransformation.
- 3) Explain noncyclic electron transport.

B) Explain glyoxilate cycle.

4

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

10

- 1) Define membrane transport and explain their types.
- 2) Explain Hexose monophosphate pathway.
- 3) Describe in detail high energy phosphate compounds.

5. Answer **any one** of the following :

10

- 1) Describe in detail glycolysis.
- 2) Explain TCA cycle.

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**B.Sc. – I (Sem. – I) Examination, 2014  
ENTREPRENEURSHIP (CGPA Pattern)  
Industrial Chemistry (Paper – I)**

Day and Date : Wednesday, 5-11-2014  
Time : 3.00 p.m. to 6.00 p.m.

Max. Marks : 70

- N. B. :** i) Answers to the **two** Sections should be written in **separate** answer books.  
ii) **All** the questions are **compulsory**.  
iii) Draw **neat** diagrams and write equations **wherever** necessary.  
iv) Figures to **right** indicate **full** marks.  
v) 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 most correct alternative for **each** of the following and rewrite the sentences :

5

- Covalent bond is formed by \_\_\_\_\_ of electrons from two combining atoms.  
a) Loss                      b) Sharing                      c) Gain                      d) None of these
- Limiting radius ratio for octahedral geometry is \_\_\_\_\_  
a) 0.175                      b) 0.225                      c) 0.414                      d) 0.732
- \_\_\_\_\_ water is the purest form of water.  
a) Rain                      b) Distilled                      c) Sed                      d) All of these
- Bond order in H<sub>2</sub> molecule is \_\_\_\_\_  
a) Four                      b) Two                      c) Three                      d) One
- Oxides of nitrogen and sulphur are responsible for \_\_\_\_\_  
a) Acid rain                      b) Nuclear pollution  
c) Noise pollution                      d) All of these

P.T.O.



2. Answer **any five** of the following : 10
- Explain in brief formation of ionic bond.
  - Define coordination number and unit cell.
  - What is meant by bonding MO ?
  - What are the types of air pollutants ?
  - What do you mean by hard water ?
  - Draw the structure of  $\text{BeCl}_2$  molecule.
  - Define BOD.
3. A) Write short notes on **any two** of the following : 10
- Characteristics of ionic solids.
  - Geometry of ammonia molecule.
  - Causes of water pollution.
- B) Answer **any one** of the following : 10
- Explain stability and magnetic characters of  $\text{N}_2$  molecule on the basis of MOT.
  - a) Calculate the radius ratio for octahedral geometry.  
b) Explain the crystal structure of NaCl.

## SECTION – II

### (Fundamentals of Organic Chemistry)

1. Choose the correct alternative for **each** of the following : 5
- Internal Wurtz reaction is used for the preparation of \_\_\_\_\_
    - Alkanes
    - Cycloalkanes
    - Alkenes
    - Alkynes
  - All carbon atoms of benzene are \_\_\_\_\_ hybridised.
    - SP
    - SP<sup>2</sup>
    - SP<sup>3</sup>
    - d<sup>2</sup>SP<sup>3</sup>



- 3) In Lassaigne's test, for the detection of sulphur, sodium fusion extract is treated with \_\_\_\_\_
- a) Sodium sulphate
  - b) Sodium nitrite
  - c) Sodium nitroprusside
  - d) Ferrous sulphate
- 4) Pharmaceutical chemistry is the chemistry of \_\_\_\_\_
- a) Drugs
  - b) Dyes
  - c) Pesticides
  - d) Polymers
- 5) \_\_\_\_\_ gives the relation between colour and chemical constitution of a compound.
- a) Huckel's theory
  - b) Carius method
  - c) Liebig's method
  - d) Witt's theory

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

10

- i) What are sedatives and hypnotics ?
- ii) Explain Kolbe's electrolytic method for the preparation of alkanes.
- iii) Draw molecular orbital picture of benzene.
- iv) Explain Diel's Alder reaction.
- v) Write the qualities of an ideal drug.
- vi) Explain :
  - a) Chromophore
  - b) Auxochrome.
- vii) Define :
  - a) Anaesthetics
  - b) Analgesics.



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

- i) Mechanism of Friedel Craft's alkylation of benzene.
- ii) Titration method for the determination of the molecular weight of an acid.
- iii) Classification of dyes on the basis of constitution.

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

- i) What are alkynes ? Why is acetylene acidic in nature ? Discuss oxidation and polymerisation reactions of alkynes.
- ii) Discuss Kjeldahl's method for the estimation of nitrogen in an organic compound.

In a Kjeldahl's estimation, the ammonia evolved from  $0.279 \times 10^{-3}$  kg of an organic compound was absorbed in  $50 \times 10^{-3}$  dm<sup>3</sup> of 0.1 N H<sub>2</sub>SO<sub>4</sub>. The excess of acid required  $20 \times 10^{-3}$  dm<sup>3</sup> of decinormal NaOH for exact neutralisation. Calculate the percentage of nitrogen in the compound.

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**B.Sc. (Entrepreneurship) (Semester – III) (New) Examination, 2014  
PRINCIPLES OF BUSINESS MANAGEMENT AND  
BUSINESS ORGANIZATION (Paper – V)**

Day and Date : Friday, 21-11-2014  
Time : 3.00 p.m. to 5.00 p.m.

Total Marks :50

1. Rewrite sentence by selecting the correct answer from the given alternatives : **10**

- 1) \_\_\_\_\_ refer getting things done through others.  
a) Business                                      b) Trade  
c) Management                                  d) Enterprise
- 2) Forecasting helps in exercising \_\_\_\_\_  
a) Control                                        b) Decision  
c) Planning                                      d) Business
- 3) Here \_\_\_\_\_ stimulates the actions.  
a) Manager                                        b) Owner  
c) Entrepreneur                                  d) Leader
- 4) \_\_\_\_\_ means a process of stimulating people to action to accomplish desired goals.  
a) Motivation                                      b) Order  
c) Guidance                                      d) Experience
- 5) \_\_\_\_\_ is the specific economic organ of society.  
a) Efforts    b) Job  
c) Business                                        d) Status
- 6) \_\_\_\_\_ is helps to reduce the cost of production.  
a) Training                                        b) Experience  
c) Knowledge                                      d) Skills
- 7) \_\_\_\_\_ is directly related to planning.  
a) Order    b) Motivation  
c) Controlling                                      d) Manager



- 8) \_\_\_\_\_ was the father of scientific management.
  - a) F. W. Taylor
  - b) Henry Fayola
  - c) Peter Ducker
  - d) Elton Mayo
- 9) \_\_\_\_\_ creative new ideas.
  - a) Innovation
  - b) Budgeting
  - c) Controlling
  - d) All the above
- 10) \_\_\_\_\_ involves manpower management and manpower planning.
  - a) Planning
  - b) Organizing
  - c) Staffing
  - d) Directing

- 2. Answer **any five** of the following : **10**
    - 1) Definition and nature of business management.
    - 2) F. W. Taylor.
    - 3) Features of Planning.
    - 4) Define business and what is meant by decision making.
    - 5) Nature of decision.
    - 6) What is meant by organization ?
  - 3. A) Write note on (**any two**) : **6**
    - 1) Types of organization.
    - 2) Roles of manager.
    - 3) Decision making process.

B) Write note on :

    - 1) Explain the types of decision and decision making process. **4**
  - 4. Write note on (**any two**) : **10**
    - 1) Define the term management and managerial process.
    - 2) Types of organization.
    - 3) Functions of management.
  - 5. Explain in detail Leadership styles and Decision making process. **10**
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**B.Sc. – II (Sem. – III) Examination, 2014  
ENTREPRENEURSHIP (Paper – VI) (New)  
Advanced Accountancy And Auditing**

Day and Date : Saturday, 22-11-2014  
Time : 3.00 p.m. to 5.00 p.m.

Max. Marks : 50

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

1. Choose the correct alternatives from the given alternatives. 10
- 1) Cash from operation is equal to \_\_\_\_\_
    - a) Net profit plus increase in the current assets
    - b) Net profit plus increase in the current liability
    - c) Net profit minus increase in the current liability
    - d) None of the above
  - 2) Increase in the amount of debtors results in \_\_\_\_\_
    - a) Decrease in cash
    - b) Increase in cash
    - c) No effects on cash
    - d) All of the above
  - 3) VAT stands for \_\_\_\_\_
    - a) Value Added Tax
    - b) Value And Tax
    - c) Value Advertising Tax
    - d) None of the above
  - 4) Purchase of plant and machinery is a \_\_\_\_\_
    - a) Application of funds
    - b) Sources of funds
    - c) Both a) and b)
    - d) None of the above
  - 5) Goodwill is a \_\_\_\_\_
    - a) Tangible Assets
    - b) Intangible Assets
    - c) Current Assets
    - d) None of the above
  - 6) Internal check is a part of the whole system of \_\_\_\_\_
    - a) Internal Audit
    - b) Interim Audit
    - c) Internal Control
    - d) None of the above



- 7) The main object of audit of account of a partnership firm is to \_\_\_\_\_
- a) Meet the statutory requirement
  - b) Increase the profit
  - c) Increase the goodwill
  - d) Detect errors and frauds
- 8) The Chartered Accountant Act passed in the year \_\_\_\_\_
- a) 1948                      b) 1949                      c) 1950                      d) 1951
- 9) Audit of Joint Stock Companies is conducted in order to \_\_\_\_\_
- a) Increase the profit
  - b) Increase the goodwill
  - c) Meet the statutory requirement
  - d) Satisfy the shareholders
- 10) Voucher is a \_\_\_\_\_
- a) Invoice received from suppliers
  - b) Document in support of an entry made in the books of accounts
  - c) Receipt issued to a customer for cash received
  - d) None of the above

2. Answer **any five** out of the following : **10**
- 1) Explain the classification of account.
  - 2) Define ledger.
  - 3) VAT Master.
  - 4) What is verification of assets ?
  - 5) Explain working capital.
  - 6) Define auditing.
3. A) Answer **any two** of the following : **6**
- 1) Explain types of audits.
  - 2) Explain the concept of fund flow statement.
  - 3) Explain the need and importance of vouching.
- B) Explain the qualification of an auditor. **4**



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

- 1) Define Bank Reconciliation Statement. Explain the need for Bank Reconciliation Statement.
- 2) A Fire occurred in the premises of Golden Star Ltd. on 15<sup>th</sup> April 2000. The books of accounts and stock amounting to Rs. 10,800/- were saved. The average rate of gross profit of company is 33% on sales. The stock on hand on 31<sup>st</sup> December, 1999 valued at 10% above cost was Rs. 58,300, Purchases Rs. 45,000, Wages Rs. 18,000 and Sales Rs. 95,400 respectively.  
Prepare a statement of claim.
- 3) Define internal control system. Explain the objectives of internal control system.

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

From the following balance sheet of Sonu Ltd. Prepare Fund Flow Statement.

<b>Sonu Ltd.</b>		
<b>Balance Sheet</b>		
<b>As on 31<sup>st</sup> Dec. 2010 and 31<sup>st</sup> Dec. 2011</b>		
<b>Liabilities</b>	<b>2010</b>	<b>2011</b>
Share Capital	1,00,000	1,00,000
General Reserve	14,000	18,000
Profit and Loss A/c	16,000	13,000
Creditors	8,000	5,400
Bills Payable	1,200	800
Provision of Tax	16,000	18,000
Doubtful Debts	400	600
<b>Total</b>	<b>1,55,600</b>	<b>1,55,800</b>
<b>Assets</b>		
Goodwill	12,000	12,000
Building	40,000	36,000
Machinery	37,000	36,000



Investment	10,000	11,000
Stock	30,000	23,400
Bills Receivable	2,000	3,200
Debtors	18,000	19,000
Cash	6,600	15,200
<b>Total</b>	<b>1,55,600</b>	<b>1,55,800</b>

**Additional Information :**

- 1) Charge Depreciation :
  - On Machinery – Rs. 4,000
  - On Building – Rs. 4,000.
- 2) Tax provision Rs. 19,000.
- 3) Interim Dividend paid Rs. 8,000.

OR

Define 'Auditors Report'. Explain the contents of Auditor's Report.

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**B.Sc. – II (Semester – III) (New) Examination, 2014**  
**ENTREPRENEURSHIP**  
**Industrial Chemistry (Paper – V)**  
**Analytical and Industrial Aspects of Inorganic Chemistry**

Day and Date : Monday, 24-11-2014  
 Time : 3.00 p.m. to 5.00 p.m.

Max. Marks : 50

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

II) *Draw neat diagrams and give equations **wherever** necessary.*

III) *Figures to the **right** indicates **full** marks.*

1. Choose the most correct alternative for the following and rewrite the sentence : **10**

1) Colour change interval or pH range of phenolphthalein is \_\_\_\_\_

- |                |                |
|----------------|----------------|
| a) 8.3 to 10.0 | b) 8.3 to 12.0 |
| c) 4.2 to 6.3  | d) 3.1 to 4.4  |

2) Solochrome black-T is \_\_\_\_\_ with metal.

- |                      |                      |
|----------------------|----------------------|
| a) Sky blue coloured | b) Wine red coloured |
| c) Pink coloured     | d) Colourless        |

3) The particle size of colloidal precipitate is \_\_\_\_\_

- |                             |                              |
|-----------------------------|------------------------------|
| a) $10^{-10}$ m             | b) $10^{-10}$ to $10^{-9}$ m |
| c) $10^{-9}$ to $10^{-6}$ m | d) $>10^{-6}$ m              |

4) Coagulation and \_\_\_\_\_ are reversible to each other.

- |               |                |
|---------------|----------------|
| a) Nucleation | b) Ageing      |
| c) Digestion  | d) Peptisation |

5) In the Haber's process, \_\_\_\_\_ % ammonia is produced from 16% reacting gases in one circulation.

- |      |       |       |       |               |
|------|-------|-------|-------|---------------|
| a) 8 | b) 12 | c) 16 | d) 10 | <b>P.T.O.</b> |
|------|-------|-------|-------|---------------|



- 6) During the synthesis of  $\text{H}_2\text{SO}_4$  by contact process, the principal oxidation reaction is \_\_\_\_\_
- a)  $\text{SO}_2 \rightarrow \text{H}_2\text{SO}_4$                       b)  $\text{S} \rightarrow \text{SO}_2$   
c)  $\text{SO}_2 \rightarrow \text{SO}_3$                           d)  $\text{SO}_3 \rightarrow \text{H}_2\text{S}_2\text{O}_3$
- 7) The term passivity was described in 1836 by \_\_\_\_\_
- a) Whitney                                      b) Schonbein  
c) Faraday                                        d) Golding
- 8) Tinning is \_\_\_\_\_ type of method of protection of metals.
- a) Electrolytic                                  b) Non-electrolytic  
c) Alloying                                        d) Electroplating
- 9) \_\_\_\_\_ catalyst is used in the hydrogenation of oils.
- a) Pt                      b) Pd                      c) Ni                      d)  $\text{V}_2\text{O}_5$
- 10) A substance which poisons the activity of catalyst is known as \_\_\_\_\_
- a) Inhibitor                                      b) Promoter  
c) Auto-catalyst                                d) Positive catalyst

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

**10**

- 1) Define the terms : auto-catalysis and induced catalysis.
- 2) Draw the titration curve for 0.1 M  $\text{CH}_3\text{COOH}$  with 0.1 M NaOH.
- 3) Explain the process of formation of nuclei during the precipitation.
- 4) Give the different reactions takes place during the manufacture of sodium carbonate by Solvay process.
- 5) Diagrammatically represent the differential aeration principle.
- 6) With the help of graphical presentation show the effect of temperature and pressure on the yield of ammonia by Haber's process.



3. A) Answer **any two** of the following : **6**
- 1) Distinguish between co-precipitation and post-precipitation.
  - 2) Give the industrial applications of catalysis.
  - 3) How the reactant gases  $H_2$  and  $N_2$  can be produced and purified in Haber's process ?
- B) How does a metal becomes passive ? How the passivity of metal is removed ? **4**
4. Answer **any two** of the following : **10**
- 1) What is metallochromic indicator ? Explain the role of metallochromic indicator in titrimetric analysis.
  - 2) Discuss the intermediate compound theory for catalysis.
  - 3) Explain the manufacturing process of  $H_2SO_4$  by contact process.
5. Answer **any two** of the following : **10**
- 1) Discuss the statement, "All corrosion is electro-chemical".
  - 2) What are the conditions for good precipitation ?
  - 3) What is acid-base indicator ? With help of titration curve, explain the choice of an indicator in the titration between strong acid and weak base.
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**B.Sc. – II (Semester – III) (New) Examination, 2014**  
**ENTREPRENEURSHIP**  
**Industrial Chemistry (Paper – V)**  
**Analytical and Industrial Aspects of Inorganic Chemistry**

Day and Date : Monday, 24-11-2014  
Time : 3.00 p.m. to 5.00 p.m.

Max. Marks : 50

- N.B. :** I) *All questions are compulsory.*  
II) *Draw neat diagrams and give equations wherever necessary.*  
III) *Figures to the right indicates full marks.*

1. Choose the most correct alternative for the following and rewrite the sentence : **10**
- 1) Colour change interval or pH range of phenolphthalein is \_\_\_\_\_
    - a) 8.3 to 10.0
    - b) 8.3 to 12.0
    - c) 4.2 to 6.3
    - d) 3.1 to 4.4
  - 2) Solochrome black-T is \_\_\_\_\_ with metal.
    - a) Sky blue coloured
    - b) Wine red coloured
    - c) Pink coloured
    - d) Colourless
  - 3) The particle size of colloidal precipitate is \_\_\_\_\_
    - a)  $10^{-10}$  m
    - b)  $10^{-10}$  to  $10^{-9}$  m
    - c)  $10^{-9}$  to  $10^{-6}$  m
    - d)  $>10^{-6}$  m
  - 4) Coagulation and \_\_\_\_\_ are reversible to each other.
    - a) Nucleation
    - b) Ageing
    - c) Digestion
    - d) Peptisation
  - 5) In the Haber's process, \_\_\_\_\_ % ammonia is produced from 16% reacting gases in one circulation.
    - a) 8
    - b) 12
    - c) 16
    - d) 10

P.T.O.





- 6) During the synthesis of  $\text{H}_2\text{SO}_4$  by contact process, the principal oxidation reaction is \_\_\_\_\_
- a)  $\text{SO}_2 \rightarrow \text{H}_2\text{SO}_4$                       b)  $\text{S} \rightarrow \text{SO}_2$   
c)  $\text{SO}_2 \rightarrow \text{SO}_3$                          d)  $\text{SO}_3 \rightarrow \text{H}_2\text{S}_2\text{O}_3$
- 7) The term passivity was described in 1836 by \_\_\_\_\_
- a) Whitney                                      b) Schonbein  
c) Faraday                                      d) Golding
- 8) Tinning is \_\_\_\_\_ type of method of protection of metals.
- a) Electrolytic                                  b) Non-electrolytic  
c) Alloying                                      d) Electroplating
- 9) \_\_\_\_\_ catalyst is used in the hydrogenation of oils.
- a) Pt                      b) Pd                      c) Ni                      d)  $\text{V}_2\text{O}_5$
- 10) A substance which poisons the activity of catalyst is known as \_\_\_\_\_
- a) Inhibitor                                      b) Promoter  
c) Auto-catalyst                                d) Positive catalyst

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

10

- 1) Define the terms : auto-catalysis and induced catalysis.
- 2) Draw the titration curve for 0.1 M  $\text{CH}_3\text{COOH}$  with 0.1 M NaOH.
- 3) Explain the process of formation of nuclei during the precipitation.
- 4) Give the different reactions that take place during the manufacture of sodium carbonate by Solvay process.
- 5) Diagrammatically represent the differential aeration principle.
- 6) With the help of graphical presentation show the effect of temperature and pressure on the yield of ammonia by Haber's process.



3. A) Answer **any two** of the following : **6**
- 1) Distinguish between co-precipitation and post-precipitation.
  - 2) Give the industrial applications of catalysis.
  - 3) How the reactant gases  $H_2$  and  $N_2$  can be produced and purified in Haber's process ?
- B) How does a metal becomes passive ? How the passivity of metal is removed ? **4**
4. Answer **any two** of the following : **10**
- 1) What is metallochromic indicator ? Explain the role of metallochromic indicator in titrimetric analysis.
  - 2) Discuss the intermediate compound theory for catalysis.
  - 3) Explain the manufacturing process of  $H_2SO_4$  by contact process.
5. Answer **any two** of the following : **10**
- 1) Discuss the statement, "All corrosion is electro-chemical".
  - 2) What are the conditions for good precipitation ?
  - 3) What is acid-base indicator ? With help of titration curve, explain the choice of an indicator in the titration between strong acid and weak base.
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**B.Sc. – II (Semester – III) (Entrepreneurship) (New) Examination, 2014  
MICROBIOLOGY AND BIOTECHNOLOGY (Paper – V)  
Genetics**

Day and Date : Tuesday, 25-11-2014  
Time : 3.00 p.m. to 5.00 p.m.

Max. Marks : 50

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

1. Rewrite the sentences by selecting correct answer from the given alternatives : 10
- I) The laws proposed by Mendel are known as \_\_\_\_\_  
a) Laws of inheritance                      b) Laws of germ plasm  
c) Laws of recapitulation                  d) Law of genetics
- II) Translocation was first discovered by \_\_\_\_\_  
a) Batson    b) Belling  
c) Blakeslee                                      d) Bridge
- III) Hemophilia in human being is caused due to \_\_\_\_\_  
a) Chromosomal aberration              b) Autosomal mutation  
c) Sex linked mutation                      d) Nonsomal mutation
- IV) In transduction transfer of donar chromosome to recipient cell is mediated by \_\_\_\_\_  
a) Plasmid    b) Bacteriophage  
c) Episome                                        d) F Factor
- V) Which of the following mode of replication is not used by bacteria ?  
a) Mitosis    b) Rolling circle  
c) Binary fission                                d) Theta model
- VI) The chromosomal aberrations reduces the amount of \_\_\_\_\_  
a) Tendam                                        b) Crossing over  
c) Genotype                                      d) Phenotype
- VII) An individual with one or more dissimilar gene pairs is called \_\_\_\_\_  
a) Heterozygous                                b) Homozygous  
c) Monozygous                                 d) Allels



- VIII) The degree of linkage is determined by the \_\_\_\_\_
- The distance between two genes
  - Cis arrangement
  - Independent assortment
  - Dependent assortment
- IX) Transposons are also called as \_\_\_\_\_
- Plastid
  - Plasmid
  - Jumping genes
  - Sleeping gene
- X) Mean, mode, medians are \_\_\_\_\_
- Measures of central tendency
  - Measures of dispersions
  - Biometric methods
  - Measures of probability

2. Answer **any five** of the following : **10**
- Define biostatistics.
  - Define mutation.
  - Define conjugation.
  - Epitasis.
  - Aneuploidy.
  - Nonsense codon.
3. A) Answer the following questions (**any two**) : **6**
- Fate of exogenote
  - Chemical mutagenic agents
  - Describe null hypothesis.
- B) Discuss in detail process of bacterial recombination. **4**
4. Answer **any two** of the following : **10**
- Explain in detail chromosomal aberration.
  - Take a brief account of transposable elements.
  - Describe in detail biostatistics with reference to Null hypothesis, Chi-square test and T test.
5. Answer **any one** of the following : **10**
- Write an essay on linkage and add a note on its significance.
  - Take a detail account of Mendelian genetics and add a note on variation on dominance.
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**B.Sc. – II (Entrepreneurship) (Semester – III) (New) Examination, 2014  
MICROBIOLOGY AND BIOTECHNOLOGY (Paper – VI)  
Fermentation Technology**

Day and Date : Wednesday, 26-11-2014  
Time : 3.00 p.m. to 5.00 p.m.

Max. Marks : 50

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

1. Rewrite the following sentences by selecting correct answer from given alternative : 10
- i) Vit. B<sub>12</sub> is also known as \_\_\_\_\_  
a) Cobamide  
b) Provitamin  
c) Citric acid  
d) Riboflavin
- ii) Distillation method mainly used for recovery of \_\_\_\_\_  
a) Amylase  
b) Citric acid  
c) Ethanol  
d) Penicillin
- iii) \_\_\_\_\_ substrate mainly used for production of amylase enzyme.  
a) Cellulose  
b) Starch  
c) Protein  
d) Lipid
- iv) Dried biomass of a single species of microbes that can be used as a protein source in the diet is known as \_\_\_\_\_  
a) SCP  
b) SPC  
c) DMC  
d) None
- v) \_\_\_\_\_ is an example algal SCP.  
a) Bacillus  
b) Spirulina  
c) Mucor  
d) None
- vi) In ethanol production the concentration of molasses is adjusted between \_\_\_\_\_  
a) 10 – 18%  
b) 50 – 55%  
c) 30 – 40%  
d) 1 – 10%
- vii) *Aspergillus niger* is used for production of \_\_\_\_\_  
a) Penicillin  
b) Glutamic acid  
c) L-Lysine  
d) Citric acid



- viii) Phenoxy acetic acid precursor used for \_\_\_\_\_ production.  
a) Penicillin G      b) Penicillin A      c) Penicillin V      d) Penicillin X
- ix) Fusel oil is by-product of \_\_\_\_\_ fermentation.  
a) Alcohol              b) Amylase              c) Penicillin              d) None
- x) Solvent extraction is used for recovery of \_\_\_\_\_  
a) Alcohol              b) Penicillin              c) Amylase              d) None

2. Answer **any five** of the following : **10**
- i) Write the application of citrate.
  - ii) Distillation.
  - iii) Enlist the name of antibiotic producing microorganism.
  - iv) Define SCP and enlist name of microbes used in SCP production.
  - v) Draw a flow chart for penicillin fermentation.
  - vi) Write beneficial role of PSB.
3. A) Answer **any two** of the following : **6**
- i) Explain biochemistry of citric acid fermentation.
  - ii) Spirulina as a SCP.
  - iii) Malt preparation in Beer production.
- B) Explain in detail bioinsecticide production. **4**
4. Answer **any two** of the following : **10**
- i) Describe in detail Amylase production.
  - ii) Explain in detail penicillin production.
  - iii) Write an essay on L-lysine fermentation.
5. Answer **any one** of the following : **10**
- i) Explain in detail Biogas production.
  - ii) Write an essay on Biofertilizer Production.
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**B.Sc. – II (Entrepreneurship) (Semester – III) (New) Examination, 2014**  
**INDUSTRIAL CHEMISTRY**  
**Analytical and Industrial Aspects of Organic Chemistry (Paper – VI)**

Day and Date : Thursday, 27-11-2014  
Time : 3.00 p.m. to 5.00 p.m.

Max. Marks : 50

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

1. Multiple choice questions : 10
- 1) The detergents suitable for hard water are generally \_\_\_\_\_
    - a) non-ionic
    - b) ionic
    - c) cationic
    - d) anionic
  - 2) The cane juice from juice heater is taken into \_\_\_\_\_
    - a) Calendria
    - b) Clarifier
    - c) Crystallizer
    - d) Dryer
  - 3) Gaunidino group is present in \_\_\_\_\_
    - a) isoniazide
    - b) phenobarbital
    - c) ethambutol
    - d) paludrin
  - 4) \_\_\_\_\_ is artificial fiber.
    - a) Cotton
    - b) Jute
    - c) Nylon-6
    - d) Silk
  - 5) A pyrethroid is an ester of cyclopentanones with \_\_\_\_\_
    - a) Cyclopropane carboxylic acid
    - b) Cyclopropane benzoic acid
    - c) Cyclobutane benzoic acid
    - d) None of these
  - 6) Shaving soap is mixed soap contains \_\_\_\_\_
    - a) Excess of steric acid
    - b) Glycerol
    - c) Glycerine
    - d) Excess of oil
  - 7) Bagasse is used for \_\_\_\_\_
    - a) Seeding
    - b) Extraction of juice
    - c) Manufacture of colotex
    - d) Building material



- 8) \_\_\_\_\_ is used as antimalarial drug.
- |                   |                |
|-------------------|----------------|
| a) Proguanil      | b) Isoniazide  |
| c) Phenobarbitone | d) Tolbutamide |
- 9) \_\_\_\_\_ is used as bleaching agent.
- |         |          |
|---------|----------|
| a) NaOH | b) NaOCl |
| c) NaCl | d) HCl   |
- 10) IAA is used as \_\_\_\_\_
- |                |                         |
|----------------|-------------------------|
| a) Herbicide   | b) Micronutrient        |
| c) Bactericide | d) Plant growth hormone |

2. Attempt **any five** of the following : 10
- 1) Define the terms amphoteric detergents.
  - 2) What is meant by denatured and rectified spirit ?
  - 3) Write objective of sizing ingredient.
  - 4) Define CNS drug with example.
  - 5) Write uses of endosulphon.
  - 6) What are pyrethroids ?
3. A) Answer **any two** of the following : 6
- i) Explain saponification process.
  - ii) What are the by-products of sugar industry ?
  - iii) Write general idea of synthetic adhesive.
- B) Explain in brief refining of raw sugar. 4
4. Answer **any two** of the following : 10
- 1) What are the raw materials used in preparation of soap ?
  - 2) Write note on by-products of alcohol industry.
  - 3) Explain in brief types of drugs.
5. Answer **any two** of the following : 10
- 1) Write synthesis and uses of ethambutol.
  - 2) Explain properties of starch.
  - 3) Write synthesis and uses of indole-3-acetic acid.
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**B.Sc. – I (Semester – I) (Entrepreneurship) (C.G.P.A. Pattern)  
Examination, 2014  
INDUSTRIAL MICROBIOLOGY – I**

Day and Date : Friday, 7-11-2014  
Time : 3.00 p.m. to 6.00 p.m.

Max. Marks : 70

- N. B. :** 1) **All questions are compulsory.**  
2) *Figures to the right indicates full marks.*  
3) **Answers to the both Sections should be written in separate answer book.**

SECTION – I  
**(Fundamentals of Microbiology)**

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

5

- i) Dry heat is used in sterilization by \_\_\_\_\_  
a) Autoclave                                      b) Hot air oven  
c) Boiling    d) Pasteurization
- ii) Peptidoglycan is component of \_\_\_\_\_ of bacteria.  
a) Capsule    b) Flagella  
c) Cell wall                                         d) Pili
- iii) Mycology is the study of \_\_\_\_\_  
a) Fungi    b) Bacteria  
c) Protozoa                                        d) Viruses
- iv) Penicillin antibiotic was discovered by \_\_\_\_\_  
a) Louis Pasteur                                    b) Alexander Flemming  
c) John Tyndall                                    d) Robert Koch
- v) Flagella is made up of \_\_\_\_\_  
a) Pilin    b) Flagellin  
c) Peptidoglycan                                   d) Polysaccharide

P.T.O.



2. Answer **any five** of the following : **10**
- i) Contribution by Antony Van Leewenhock.
  - ii) Functions of capsule.
  - iii) Define genus.
  - iv) Define antimicrobials.
  - v) What is diauxic growth ?
  - vi) Define industrial microbiology.
  - vii) Contribution of winogradsky.
3. A) Write short notes on **any two** of the following : **10**
- i) Describe reserve food materials.
  - ii) Sterilization by chemicals.
  - iii) Difference between procaryotic and eucaryotic cells.
- B) Answer **any one** of the following : **10**
- i) Describe in detail sterilization by heat.
  - ii) Explain in detail nutritional classification based on carbon and energy sources.

SECTION – II  
(Basic techniques in Microbiology)

1. Rewrite the following sentences by selecting correct answers from given alternatives : **5**
- i) Viruses are observed under \_\_\_\_\_ microscope.
    - a) Compound b) Fluorescent
    - c) Electron d) Bright field
  - ii) \_\_\_\_\_ is an example of living media.
    - a) Embryonated egg b) Peptone water
    - c) Nutrient agar d) Blood agar
  - iii) \_\_\_\_\_ is acting as mordant in Gram staining.
    - a) Crystal violet b) Iodine
    - c) Alcohol d) Basic fuchsin



- iv) DMC is used for \_\_\_\_\_ of bacteria.
- |                |                  |
|----------------|------------------|
| a) Enumeration | b) Preservation  |
| c) Cultivation | d) Sterilization |
- v) \_\_\_\_\_ is acting as source of light in bright field microscope.
- |              |              |              |           |
|--------------|--------------|--------------|-----------|
| a) Objective | b) Eye piece | c) Condenser | d) Mirror |
|--------------|--------------|--------------|-----------|

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

- i) Use of phase contrast microscope.
- ii) Define natural media.
- iii) Give two examples of basic stains.
- iv) What is function of meat extract in culture media ?
- v) Give the two examples of selective media.
- vi) What is simple staining ?
- vii) Types of objective lenses.

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

- i) Describe in detail acid fast staining.
- ii) Isolation techniques.
- iii) Enumeration of bacteria by indirect methods.

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

- i) Describe in detail bright field microscope.
  - ii) Describe in detail culture media.
-



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**B.Sc. – II (Entrepreneurship) (Semester – IV) Examination, 2014**  
**MICROBIOLOGY AND BIOTECHNOLOGY**  
**Molecular Biology (Paper – VII)**

Day and Date : Wednesday, 19-11-2014  
Time : 11.00 a.m. to 1.00 p.m.

Max. Marks : 50

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

1. Rewrite the sentences by selecting correct answer from the given alternatives : **10**
- I) \_\_\_\_\_ is invitro method for replication of DNA in which a target nucleotide sequence is copied repeatedly.
- a) PCR  
b) Genetic Mapping  
c) Transfection  
d) Transduction
- II) \_\_\_\_\_ first time demonstrate semi conservative mode of replication of DNA.
- a) Matthew Meselson and Franklin Stahl  
b) Watson and Crick  
c) N. H. Hopkins  
d) J. W. Robert
- III) “Gene battery model” of gene regulation in eukaryotes is proposed by \_\_\_\_\_
- a) Jacob and Monod  
b) Britten and Davidson  
c) Beadle and Tatum  
d) Korenberg and Ochoa
- IV) The function of t-RNA is \_\_\_\_\_
- a) Selection of amino acid  
b) Production of m-RNA  
c) Production of Ribosome  
d) Production of amino acid



- V) \_\_\_\_\_ enzyme is responsible of synthesis of DNA from RNA.
- a) Replicase
  - b) Reverse transcriptase
  - c) RNA polymerase
  - d) DNA polymerase
- VI) DNA cloning is a part of \_\_\_\_\_
- a) DNA sequencing
  - b) Recombinant DNA technology
  - c) Nucleic acid hybridization
  - d) Metagenomics
- VII) Procaryotic genetic system contains
- a) DNA and Histones
  - b) Either DNA or histones
  - c) DNA and non histones
  - d) Neither DNA nor histones
- VIII) Which of the following is smallest RNA ?
- a) m-RNA
  - b) t-RNA
  - c) r-RNA
  - d) chromosomal RNA
- IX) The smallest segment of DNA which helps in the synthesis of one polypeptide is called as
- a) Gene
  - b) Muton
  - c) Cistron
  - d) Recon
- X) Invitro synthesis of gene was first time carried out for \_\_\_\_\_
- a) Nif gene
  - b) LAC gene
  - c) Ala-t-RNA
  - d) Tyrosine-t-RNA

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

10

- a) Define Replication.
- b) Define Transcription.
- c) Define Role of sigma factor.



- d) Define SOS repair.
  - e) Northernblotting.
  - f) Transcription factory in eukaryotic cell.
3. A) Answer **any two** of the following : **6**
- a) Describe in detail Rolling Circle model.
  - b) Explain in brief Mismatch repair mechanism.
  - c) Take a brief account of post transcriptional modification.
- B) Explain in detail enzymes involved in DNA replication. **4**
4. Answer **any two** of the following : **10**
- a) Give detail account of tryptophan operon.
  - b) Discuss in detail chemical method for DNA sequencing.
  - c) Explain in detail DNA repair mechanism.
5. Answer **any one** of the following : **10**
- a) Write an essay on restriction mapping and add a note on its application.
  - b) Write an essay on Gene regulation of prokaryotic organism with suitable example.
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**B.Sc. – I (Semester – I) (CGPA Pattern) Examination, 2014**  
**ENTREPRENEURSHIP**  
**Industrial Biotechnology (Paper – I)**

Day and Date : Monday, 10-11-2014

Max. Marks : 70

Time : 3.00 p.m. to 6.00 p.m.

- N. B. :**
- 1) *Figures to the right indicate full marks.*
  - 2) **Each** Section includes **four** questions.
  - 3) **All** the questions in **each** Section are **compulsory**.
  - 4) **Draw** a neat labelled diagram **wherever** necessary.
  - 5) **Each** Section should be attempted on **separate** answer book.

SECTION – I  
(Cell Biology)

35

1. Rewrite the answer by choosing **one** of the correct objective :

5

- 1) Prokaryotic cells do not possess \_\_\_\_\_  
a) Chlorophyll    b) Chloroplast    c) Fimbriae    d) Gas vesicles
- 2) Plant cells differ from animal cells due to the presence of \_\_\_\_\_  
a) Mitochondria    b) Endoplasmic reticulum  
c) Chloroplast    d) Lysosomes
- 3) Codons that do not code for any amino acid are known as \_\_\_\_\_  
a) Stop codons    b) Non-stop codons  
c) End up codons    d) Start codons
- 4) \_\_\_\_\_ contain hydrolytic enzymes.  
a) Golgi complex    b) Mitochondria  
c) Lysosomes    d) Chloroplast
- 5) Chromosome having terminal centromere is called \_\_\_\_\_  
a) Acrocentric    b) Telocentric  
c) a) and b) both    d) Metacentric

P.T.O.



2. Answer **any five** of the following : 10
- i) Define chromosome and metacentric chromosome.
  - ii) Enlist all the stages and substages of meiosis.
  - iii) Write any two functions of endoplasmic reticulum.
  - iv) What are cytoskeletal structures ? Enlist their 3 types.
  - v) Write any two functions of plant cell wall.
  - vi) Differentiate between prokaryotic and eukaryotic cell (any two differences).
  - vii) Differentiate between euchromatin and heterochromatin (any two differences).
3. Write short notes on **any two** of the following : 10
- i) Mitochondria
  - ii) Cell senescence and death
  - iii) Membrane transport.
4. Answer **any one** of the following : 10
- i) Differentiate between prokaryotic and eukaryotic cell.
  - ii) Give a detailed account on chemical nature and structure of genetic material.

SECTION – II  
(Animal and Plant Physiology)

35

1. Rewrite the answer by choosing **one** of the correct alternative : 5
- 1) Skin is \_\_\_\_\_ epithelium.
- |                    |               |
|--------------------|---------------|
| a) Striated        | b) Stratified |
| c) Straight/simple | d) Glandular  |
- 2) Muscles involved in heart are \_\_\_\_\_
- |             |                 |
|-------------|-----------------|
| a) Striated | b) Non striated |
| c) Cardiac  | d) Simple       |
- 3) Fat is stored in \_\_\_\_\_ tissue.
- |            |              |
|------------|--------------|
| a) Areolar | b) Adipose   |
| c) Bone    | d) Cartilage |





4) \_\_\_\_\_ cell organelle is involved in photosynthesis of plants.

- a) Chlorophyll
- b) Chloroplast
- c) Mitochondria
- d) Lysosomes

5) \_\_\_\_\_ is a C4 plant.

- a) Sugarcane
- b) Mango
- c) Hibiscus
- d) Pea

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

10

- i) Define both : 1) Tissue 2) Sarcomere.
- ii) Draw a labelled diagram of V.S. of skin.
- iii) Why the bones are hard and rigid ?
- iv) Which are the basic elements necessary for growth of animal ?
- v) Enlist photosynthetic pigments.
- vi) Explain the role of Rubisco.
- vii) Differentiate between C3 and C4 plants (any two differences).

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

10

- i) Differentiate between simple epithelium and columnar epithelium.
- ii) Explain the structure of stomach.
- iii) Photophosphorylation.

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

10

- i) Describe nervous tissue with the structure of neuron.
  - ii) Give detailed account on photosynthetic apparatus and photosynthetic pigments.
-