

**CENTRAL UNIVERSITY OF HARYANA**

End Semester Examinations June 2023

Programme: B. Voc. Biomedical Sciences

Semester: 6<sup>th</sup>


Course Title: Concepts in Chemistry-V

Course Code: BMS-602 (Regular)

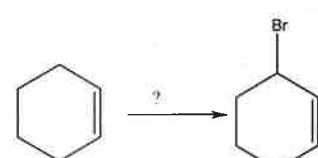
Max. Time: 3 Hours

Max. Marks: 50

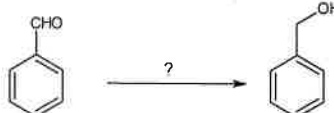
**Instruction:** All questions are mandatory.

- Q 1. Attempt any 5: (5X2=10)
- Write a note on atom economy. Explain with suitable examples
  - Write a note on the green synthesis of aspirin.
  - State isoprene rule. Give 2 examples of terpenes
  - Give examples of reactions using NBS and peracids.
  - What are the formulae of lithium aluminum hydride and sodium borohydride? What kind of reactions are given by them? Which one is more reactive?
  - Suggest one method of protection and deprotection of the alcohol group.
  - What is the need for the protection of amino groups in multi-step synthesis?
- Q 2. Attempt any two: (2X5=10)
- Compare the Boots method and BHC synthesis of Ibuprofen.
  - What are renewable resources? Why it is needed for sustainable development. Give examples.
  - What are the advantages of supercritical CO<sub>2</sub> over conventional solvents?
- Q 3. (2X5=10)
- Name four different methods of extraction of terpenes and explain one of them in detail.
  - Write the structure, properties, uses, and side effects of Camphor.
  - Write a short note on Vitamins.
- Q 4. (2X5=10)
- a) Complete the following reactions
- 

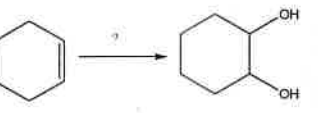
Reaction 1: CC(O)C >> [Dess Martin periodinane] ?



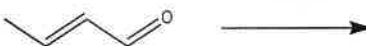
Reaction 2: C1=CCCCC1 >> [?] C1=CCCC(Br)C1



Reaction 3: c1ccccc1C=O >> [?] c1ccccc1CO



Reaction 4: C1=CCCCC1 >> [?] C1CCC(O)C(O)C1



Reaction 5: CCC=CC=O >> [NaBH4] ?
- What precautions should be taken while storing and handling Diazomethane?
  - What are the advantages of using Dess Martin Periodane over chromium-based oxidants?
- Q 5. (2X5=10)
- Write a note on the protection and deprotection of aldehydes/ketones.
  - What is the purpose of using protecting groups in multistep synthesis? ii) What are the characteristics of protecting groups?
  - What is the need of protecting hydroxyl groups? How will you protect 1,2 –diols and 1,3-diols?



**Central University of Haryana**  
**End Semester Examination (Regular), June 2023**

Program : B. Voc. Biomedical Sciences  
Semester : IV  
Paper Name : Cell Biology  
Paper code : BMS -401  
Max Marks : 50  
Max Time : 3 hours

**Question No. 1 is compulsory. Attempt one question from each Unit**

**Question No.1 Attempt any 5 questions. Each question carries 2 marks.**

1. Archaeobacteria
2. Nuclear protein complex
3. Lysosomes
4. RER and SER
5. Oxysomes
6. Lipid raft
7. Synaptonemal complex
8. Necrosis

**Unit 1**

**Question No 2**

- A) Differentiate between prokaryotic cell and eukaryotic cell. (5 Marks)
- B) Explain protein transport from ER to cis Golgi Complex.(5 Marks)

**OR**

**Question No 3**

- A) Explain ultra structure of animal cell. (5Marks)
- B) Explain nucleus structure in detail. (5 Marks)

**Unit 2**

**Question No 4**

Write short note on

- A) semi-autonomous nature of mitochondria. (2 Marks)
- B) Cell junctions (5 Marks)
- C) Secondary active transport (3 Marks)

**OR**

**Question No 5 (10 marks)**

- A) Explain in detail how mitochondrial proteins are targeted. (5 Marks)
- B) Explain fluid mosaic model of plasma membrane. (5 Marks)

### Unit 3

**Question No 6**

A) What are enzyme linked signalling pathways. Explain any one in detail. (5 Marks)

B) Define paracrine and autocrine signalling with examples. (2 Marks)

C) Define

a) Protofilament

b) G actin

c) Sarcomere

(1x3=3 Marks)

OR

**Question No 7**

A) With a suitable example explain GPCR signaling pathway.( 5 Marks)

B) What are actin and myosin filaments. Explain their role in muscle contraction. (5 Marks)

### Unit 4

**Question No 8**

A) Define cell cycle. Explain various mechanisms of cell cycle regulation in eukaryotes. (5 Marks)

B) What are stem cells? Classify on the basis of their potency. (5 Marks)

OR

**Question No 9**

A) Explain cell cycle check points in detail. (5Marks)

B) What is apoptosis? Explain intrinsic apoptotic pathway (5 Marks)

# CENTRAL UNIVERSITY OF HARYANA

## End Semester Examinations June 2023

Program: B. Voc. Biomedical Sciences

Semester: 4<sup>th</sup>

Max. time: 3 hours

Max. Marks: 25

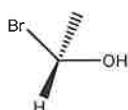
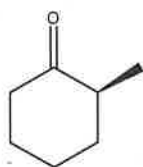
Course Title: Concepts in Chemistry-IV

Course Code: BMS-403 (Reappear)

Q 1. Attempt any **Five**.

(5X1=5)

- State whether Bakelite is a copolymer or homopolymer. Give its monomer(s).
- What is the function of Sulphur in the vulcanization of rubber?
- Name the pigment responsible for colour in carrots.
- Define enantiomers.
- Define angle strain.
- Assign the configuration of the stereo centers (R and S) in the following compounds:



- Define Chromophore. Give example.

Q 2. Attempt any **two**.

(2X5=10)

- Write a short note on the resolution of a racemic mixture.
- Write a note on the conformational analysis of ethane.
- (i) The (+) enantiomer of compound D has an optical rotation of 25°. What is the optical rotation value if a pure sample of D contains 80% of the (+) enantiomer and 20% of the (-) enantiomer?  
(ii) Write a short note on the optical isomerism of tartaric acid.

Q3. Attempt any **two**.

(2X5=10)

- Write a short note on the Modern Theory of colors.
- Write a short note on Cyclodextrin.
- (i) Define the Number average molecular weight and Weight average molecular weight.  
(ii) Write the difference between thermosetting polymers and thermoplastics with examples.





**Central University of Haryana**  
**Semester IV Term End Examination, June 2023**  
**B.Voc. Programmes**  
**Branch: Biomedical Sciences**

**Course Code:** BMS - 403  
**Course Title:** Enzymology

**Max Time:** 3 hours  
**Max Marks:** 25

**Instructions:**

Question Number 1 (**PART-I**) is compulsory and carries total 5 marks (Each sub Question carries 1 Marks).

Question Numbers 2 (**PART-II**) 2 (two) to 3 (three) carry 10 marks each with internal choice.

**PART - I**

**Q. No.1** Write down a short note (**Attempt any five**) **(5 X 1= 5 marks)**

- (a) Transition state theory.
- (b) IU and Katal
- (c) Effect of pH on the enzyme catalysis
- (d) Ribozymes
- (e) Kcat with special reference to specificity
- (f) Coenzyme form of Niacin & Folic acid
- (g) Covalent modification
- (h) Lineweaver Burk plot

**PART –II (Unit 1)**

**Q. No.2** **(10 marks)**

- (a) Write note on the history and general characteristics of enzymes. (3 marks)
- (b) Distinguish between Metal-activated and Metallo-enzyme. (3 marks)
- (c) Explain the significance of nomenclature and IUBMB classification with one examples each – Hydrolases, Ligase and Translocases. (4 marks)

**OR**

**Q. No.2**

- (a) Define Proximity and Orientation effect and Acid Base catalysis. (2 marks)
- (b) Explain Group and Stereo specificity of enzyme with example. (3 marks)
- (b) Diagrammatically present the salient features of lock and key model and induced fit theory? Give its significance. (5 marks)

**PART –II (Unit 2)**

**Q. No.3** **(10 marks)**

- (a) Derive the expression for Michaelis-Menton equation illustrating the  $K_m$  and  $V_{max}$  through the pictorial presentation. What is its importance? (4 marks)
- (b) Explain Suicide inhibitor with examples. How they help in drug designing. (2 marks)
- (c) Differentiate competitive and non-competitive enzyme inhibition? What are the kinetic changes? Give examples. Illustrate in double reciprocal plot. (4 marks)

**OR**

**Q. No 3** **(10 marks)**

- (a) What are Isozymes and write about different Isozymes and their clinical importance? (4 marks)
- (b) Discuss Zymogen. Give examples and its significance? (2 marks)
- (c) Define allosteric enzymes Explain in detail the allosteric regulation of enzymes activity. Illustrate with example and graphical representation. (4 marks)





**Central University of Haryana**  
**End Semester Examination (Re-Appear), June 2023**

**Programme** : B.Voc. Biomedical Sciences  
**Semester** : V  
**Paper Name** : Medical Genetics  
**Paper code** : BMS -501  
**Max Marks** : 50  
**Max Time** : 3 hours

*Note: All sections are compulsory. Attempt any five in Question 1 (Section-I) and any two from each Section (Section-II to Section-V).*

**Section-I**

**Question No.1 Attempt any 5 questions. Each question carries 2 marks (5×2 marks)**

1. Write a note on any two genetic disease?
2. Differentiate between autosomal dominant and recessive inheritance?
3. Describe Fragile-X syndrome?
4. Describe mutation and types of mutation?
5. Differentiate between Turner syndrome and Klinefelter syndrome?
6. Write a short note on human gene map?
7. Discuss the defects of lipid metabolism?
8. Write a short note on tumor suppressor gene?

**Section-II**

**Question No. 2 (2×5 marks)**

1. Write a detailed note on clinical impact of genetic disease?
2. Explain the Mendel's law of segregation?

**OR**

**Question No. 3 (5×2 marks)**

1. Write a note on any five types of genetic diseases?
2. Describe characteristics of autosomal dominant and recessive inheritance?

**Section-III**

**Question No. 4 (5×2 marks)**

1. Distinguish between X-linked inheritance and mitochondrial inheritance?
2. Describe the genetic variation of ABO blood group and Rh system?

**OR**

**Question No. 5 (5×2 marks)**

1. What do you understand by Hardy-Weinberg principle? Discuss the causes of genetic variation?
2. Write a note on X-linked dominant inheritance and Y-linked inheritance with example?

**Section-IV**

**Question No. 6 (5×2 marks)**

1. Write a note on deletion, duplication and translocation?
2. Write a note on linkage analysis and human gene map?

**OR**

**Question No. 7 (5×2 marks)**

1. Write a note on Down syndrome and Turner syndrome in detailed?
2. Discuss functional versus non-functional DNA in respect to physical mapping and cloning?

**Section-V**

**Question No. 8 (5×2 marks)**

1. Explain any five defects of carbohydrate metabolism?
2. Describe amniocentesis? Explain the procedure of amniocentesis?

**OR**

**Question No. 9 (5×2 marks)**

1. Distinguish between inherited cancer gene and somatically altered gene?
2. Discuss any five defects of amino acid metabolism?

**Central University of Haryana**  
**End Semester Examination (Re-Appear), June 2023**

<b>Programme</b>	<b>: B.Voc. Biomedical Sciences</b>
<b>Semester</b>	<b>: V</b>
<b>Paper Name</b>	<b>: Molecular Biology</b>
<b>Paper code</b>	<b>: BMS -502</b>
<b>Max Marks</b>	<b>: 37.5</b>
<b>Max Time</b>	<b>: 3 hours</b>

*Note: All sections are compulsory. Attempt any five in Question 1 (Section-I) and any two from each Section (Section-II to Section-IV).*

**Section-I**

**Question No.1 Attempt any 5 questions. Each question carry 1.5 marks (5×1.5 marks)**

1. Describe introns and exons?
2. Discuss semiconservative mode of DNA replication?
3. Describe RNA polymerase?
4. Differentiate between miRNA and siRNA?
5. Discuss the structure of tRNA?
6. Write a short note on splicing?
7. Describe charging of tRNA?
8. Differentiate between DNA damage and DNA repair?

**Section-II**

**Question No. 2 (2×5 marks)**

1. Explain the regulation of chromatin structure and nucleosome assembly?
2. Explain the mechanism of DNA replication in prokaryotes?

**OR**

**Question No. 3 (5×2 marks)**

1. Write a detailed note on Euchromatin and heterochromatin?
2. Describe the role of DNA polymerase, DNA ligase, Primase, Gyrase and SSBP in DNA replication?

**Section-III**

**Question No. 4 (5×2 marks)**

1. Explain the mechanism of transcription in eukaryotes?

2. Write a detailed note on transcriptional regulation?

**OR**

**Question No. 5 (5×2 marks)**

1. Explain the mechanism of transcription in prokaryotes?
2. Write a note on regulatory RNA and RNA interference?

**Section-IV**

**Question No. 6 (5×2 marks)**

1. Explain the detailed mechanism of splicing?
2. Describe the mechanism of translation-dependent regulation of mRNA?

**OR**

**Question No. 7 (5×2 marks)**

1. Write detailed note on Alternative splicing and RNA editing?
2. Explain the mechanism of translation in prokaryotes?

**Central University of Haryana**  
**End Semester Examination (Re-Appear), June 2023**

<b>Programme</b>	<b>: B.Voc. Biomedical Sciences</b>
<b>Semester</b>	<b>: V</b>
<b>Paper Name</b>	<b>: Medical Biotechnology</b>
<b>Paper code</b>	<b>: BMS -503</b>
<b>Max Marks</b>	<b>: 37.5</b>
<b>Max Time</b>	<b>: 3 hours</b>

*Note: All sections are compulsory. Attempt any five in Question 1 (Section-I) and any two from each Section (Section-II to Section-IV).*

**Section-I**

**Question No.1 Attempt any 5 questions. Each question carry 1.5 marks (5×1.5 marks)**

1. Describe restriction enzymes?
2. Write a short note on cDNA library?
3. Describe interferon with examples?
4. Differentiate between Cystic fibrosis and Alzheimer diseases?
5. Write a short note on RFLP analysis?
6. Describe somatic cell therapy with example?
7. Write a short note on transgenic animal with example?
8. Discuss antisense therapy (gene blocking therapy)?

**Section-II**

**Question No. 2 (2×5 marks)**

1. Write a detailed note on Restriction enzymes and Plasmid?
2. Explain the mechanism of cDNA library preparation?

**OR**

**Question No. 3 (5×2 marks)**

1. Describe the safety issues involved in recombinant DNA experiments?
2. Explain the steps involved in gene expression in rDNA technology?

**Section-III**

**Question No. 4 (5×2 marks)**

1. Explain the mechanism of Insulin production in pharmaceutical industry using rDNA technology?



2. What is PCR? Describe the detailed mechanism of PCR?

**OR**

**Question No. 5 (5×2 marks)**

1. Describe the role of medical biotechnology in vaccine development in pharmaceutical industries with example?
2. Explain the detailed mechanism of DNA fingerprinting?

**Section-IV**

**Question No. 6 (5×2 marks)**

3. Write a detailed note on somatic cell therapy and gene therapy with examples?
4. Describe the role of transgenic animals in improvement of medical products with example?

**OR**

**Question No. 7 (5×2 marks)**

3. Explain the mechanism of gene replacement therapy using retroviral vector?
4. Write a detailed note on techniques involved in transfer of desired gene into mammalian cell in rDNA technology?







**Central University of Haryana**  
**Semester IV End Term Examination June, 2023**  
**B.Voc. Programme**  
**Branch: Biomedical Sciences**

Course Code: BMS-402  
Course Title: Pharmacology

**Max Time: 3h**  
**Max Marks: 50**

**Instructions:**

Question Number 1 (one) (**PART-I**) is compulsory and carries total of ten marks (Each sub-Question carries two marks).

Question Numbers 2 (two) to 5 (Five) carry ten marks each. Attempt any two sections of each question.

**PART -I**

Q. No.1 Briefly explain the following (**ANY FIVE**).

(2x5=10 marks)

- a) Bioequivalence
- b) Drug efficacy
- c) Drug potency
- d) Official compendia
- e) Parasympatholytics
- f) Clinical use of Atenolol
- g) Cross resistance
- h) Adverse effects of Tetracycline

**PART -II**

Q. No.2

- a) Define the Pharmacology and describe drug nomenclature with suitable examples. (5 marks)
- b) Briefly discuss different routes of drug administration. (5 marks)
- c) Describe the Passive diffusion with a well-labelled diagram. (5 marks)

Q. No.3

- a) Define Pharmacokinetics and briefly discuss the absorption of drugs. (5 marks)
- b) Briefly describe the therapeutic index OR drug dose relationship with a suitable example and diagram. (5 marks)
- c) Give a detailed explanation of clinical trials. (5 marks)

Q. No 4

- a) Write the important characteristics of subtypes of muscarinic receptor (5 marks)
- b) Explain the mechanism of action, pharmacokinetics and clinical uses of Physostigmine. (5 marks)

- c) Write a note on synthesis and storage of Catecholamines in adrenergic transmission process. (5 marks)

**Q. No.5**

- a) Describe the mechanism of action and adverse effects of Penicillins and Zidovudine. (5 marks)
- b) Discuss the mechanism of action, pharmacokinetics and clinical uses of Methotrexate. (5 marks)
- c) Write a short note on mechanism of action of Aspirin and Thiazide diuretics. (5 marks)



Central University of Haryana  
Semester VI End Term Examination June, 2023  
B.Voc. Programme  
Branch: Biomedical Sciences

Course Code: BMS-603  
Course Title: Medicinal Chemistry (Regular)

Max Time: 3h  
Max Marks: 25

**Instructions:**

Question Number 1 (one) (**PART-I**) is compulsory and carries total of FIVE marks (Each sub-Question carries ONE marks).

Question Numbers 2 (two) to 5 (Five) carry FIVE marks each, with internal choice.

**PART -I**

Q. No.1 Give the definition of **ANY FIVE** of the following.

(1x5=5 marks)

- a) Drug Design
- b) Hydrogen bonding
- c) Optical isomerism
- d) Ionization
- e) Inverse agonist
- f) Drug potency
- g) DNA Intercalators

**PART -II**

Q. No.2

- a) Briefly explain the history and development of Medicinal Chemistry. (5 marks)

**OR**

- b) Describe a drug design method with a detailed description of analogue synthesis. (5 marks)

Q. No.3

Write short notes on **ANY TWO** ( $2.5 \times 2 = 5$ )

- a) QSAR
- b) Partition coefficient
- c) Solubility
- d) Chelation

**Q. No 4**

a) What do you mean by competitive enzyme inhibition? Describe the medicinal significance of enzyme inhibitors in brief. (5 marks)

**OR**

b) Describe the mechanism of Receptor sensitization and desensitization. (5 marks)

**Q. No.5**

Write short notes on **ANY TWO** ( $2.5 \times 2 = 5$ )

- a) Carmustine
- b) Mechlorethamine
- c) Membrane bound enzyme activation
- d) Amsacrine

**Central University of Haryana**  
**End Semester Examination (Regular), June-July 2023**

Program: B. Voc. Biomedical Sciences

Paper code: SLLL BMS 1203 C 2002

Paper Name: Analytical Chemistry Semester:

2<sup>nd</sup>

Max Marks: 25

Max Time: 3 hours

**Instructions:** All sections are compulsory.

**Section-1:** Attempt any five.

(5x1=5)

- a) What is the bathochromic shift?
- b) Define auxochrome.
- c) What is the necessary condition for IR Spectroscopy?
- d) Which solvent is ideal for IR spectroscopy?
- e) What is Graham's Law of diffusion?
- f) What weight of HCl is present in 155 ml of a 0.540 M solution?
- g) State Raoult's law.

**Section-2:** Attempt any two questions.

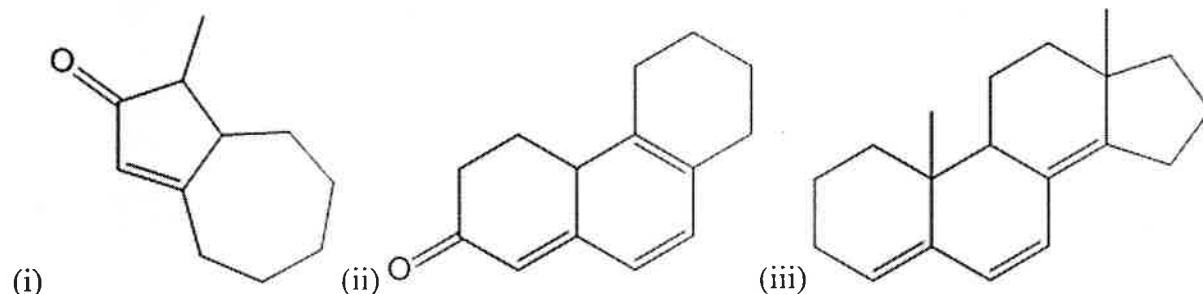
(2x5=10)

1. Derive the mathematical expression to determine the molar mass of non-volatile solute using relative lowering of vapour pressure.
2. Derive the Kinetic gas equation for 'N' molecules of a gas, each having a mass 'm', and closed in a cubical vessel of volume 'V' having each side of length 'l'.
3. Derive a relation between the Van't Hoff factor and the degree of dissociation.

**Section -3:** Attempt any two questions.

(2x5=10)

1. Calculate lambda max ( $\lambda_{max}$ ) for any of the two compounds given below.



2. What are the different types of vibrations shown by IR active molecules? Draw the different modes of vibrations.
3. Write a short note on Beer-Lambert law.





**Central University of Haryana**  
**Semester II Term End Examination, June 2023**  
**B. Voc. Programmes**  
**Branch: Biomedical Sciences**

**Course Code:** SLLL BMS 12 01 C 4004  
**Course Title:** Biomolecules and Enzymology

**Max Time:** 3 hours  
**Max Marks:** 50

**Instructions:**

**PART-I** - Question Number 1 is compulsory and carries total 10 marks (Each sub Question carries 2 Marks).

**PART-II**- Question Numbers 2 to 5 carry 10 marks each with internal choice.

**PART - I**

**Q. No.1** Write down a short note (**Attempt any 5**) (2 x 5= 10 marks)

- (a) Thromboxanes
- (b) Role of Coenzymes
- (b) Isoelectric point
- (c) Chymotrypsin
- (d) Triacylglycerides
- (e) Specific Activity
- (f) Catalytic Antibodies
- (g) Aldonic acids

**PART – II**

**Unit 1**

**Q. No. 2** What are heteropolysaccharides? Explain some common heteropolysaccharides in detail. (10Marks)

**OR**

**Q. No. 3** Write short note on (5x2=10)  
a) Disaccharides  
b) Phospholipids

**Unit 2**

**Q. No.4** Explain various structural forms of proteins and bonds involved in their stability. (10 marks)

**OR**

**Q. No 5**  
(a) What are amino acids? Write their classification (5 marks)  
(b) Explain double helix structure of DNA. (5 marks)

### Unit 3

#### Q. No.6

- (a) Define enzymes? Explain the classification of enzymes in details with example. (5 marks)
- (b) Explain the effect of temperature, pH, substrate concentration and metal ions on the regulation of enzyme activity with diagram. (5 marks)

OR

#### Q. No.7

- (a) Define Active Site. Explain in brief specificity of enzyme with example. (5 marks)
- (b) Describe the theories of enzyme catalysis - Lock key model and Induced fit theory with suitable diagram. (5 marks)

### Unit 4

#### Q. No.8

- (a) Derive the Michaelis-Menten equation? Determine  $K_m$  and  $V_{max}$  with their significance. (5 marks)
- (b) Define Isoenzymes and explain their structure, organ distribution and diagnostic importance. (5 marks)

OR

#### Q. No.9

- (a) Define Suicide inhibitor. Describe the different types of enzyme inhibitions with examples and graph. Mention its role in clinical medicine. (5 marks)
- (b) What is allosteric site? State the importance of allosteric enzymes? Discuss allosteric regulation with suitable example. (5 marks)



**Central University of Haryana**  
**End Semester Examination, June 2023**

<b>Programme</b>	<b>: B.Voc. Biomedical Sciences</b>
<b>Semester</b>	<b>: II</b>
<b>Paper Name</b>	<b>: Environmental Science</b>
<b>Paper code</b>	<b>: SLLL BMS 1202 C 4004</b>
<b>Max Marks</b>	<b>: 50</b>
<b>Max Time</b>	<b>: 3 hours</b>

*Note: All sections are compulsory. Attempt any five in Question 1 (Section-I) and any two from each Section (Section-II to Section-V).*

**Section-I**

**Question No.1 Attempt any 5 questions. Each question carries 2 marks (5×2 marks)**

1. Describe the scopes of environment?
2. Differentiate between aquatic and terrestrial ecosystem?
3. Describe deforestation and its impact on environment?
4. Explain biodiversity conservation?
5. What do you understand by pollution? Describe types of environmental pollution?
6. Differentiate between global warming and ozone depletion?
7. Describe population density with formula?
8. Write a note on Chipko movement?

**Section-II**

**Question No. 2 (2×5 marks)**

1. Explain multidisciplinary nature of environmental science?
2. Write a detailed note on structure and function of ecosystem?

**OR**

**Question No. 3 (5×2 marks)**

1. What is ecological succession? Explain the mechanism of primary ecological succession of aquatic ecosystem?
2. Write a detailed note on energy flow: food chain and food web?

**Section-III**

**Question No. 4 (5×2 marks)**

1. Write a note on the following?

- (a) Land degradation
- (b) Soil erosion
- (c) Flood

2. What is biodiversity conservation? Explain the types of biodiversity conservation with examples?

**OR**

**Question No. 5 (5×2 marks)**

- 1. Distinguished between renewable and non-renewable energy with example?
- 2. Describe different level of biological diversity?

**Section-IV**

**Question No. 6 (5×2 marks)**

- 1. Describe water pollution, causes, effect on environment and its control in details?
- 2. Explain the detailed mechanism of greenhouse gas phenomena?

**OR**

**Question No. 7 (5×2 marks)**

- 1. What is acid rain? Explain the mechanism of acid rain?
- 2. Write a note on different environmental laws?

**Section-V**

**Question No. 8 (5×2 marks)**

- 1. Distinguished between logistic and exponential growth of human population?
- 2. Explain the role of Indian religions in environmental conservation?

**OR**

**Question No. 9 (5×2 marks)**

- 1. Write a note on the following disaster management:
  - (a) Landslide
  - (b) Earthquake
- 2. What is carbon footprint? How human population growth affect carbon footprint?



**Central University of Haryana**  
**Semester III Term End Examination, June 2023**  
**B. Voc. Programmes**  
**Branch: Biomedical Sciences**

**Course Code:** BMS - 302

**Max Time:** 3 hours

**Course Title:** Microbiology (Reappear)

**Max Marks:** 50

**Instructions:**

**PART-I** - Question Number 1 is compulsory and carries total 10 marks (Each sub Question carries 2 Marks).

**PART-II** - Question Numbers 2 to 5 carry 10 marks each with internal choice.

**PART - I**

**Q. No.1** Write down a short note (Attempt any 5)

(2 X 5= 10 marks)

- (a) Use of Microscopes
- (b) Spontaneous Generation
- (c) Characteristics of Plasmid
- (d) Endotoxin.
- (e) Sterilization
- (f) Culture Media
- (g) Antibiotics
- (h) Fermentation technology

**PART – II**

**Unit 1**

**Q. No.2**

- (a) Define Microbiology. Write down the recent scope in the field of Microbiology.

(5 marks)

- (b) Write the difference between Prokaryotes and Eukaryotes cells with a well labelled diagram?

(5 marks)

**OR**

**Q. No.2**

- (a) Define the important and structural features of the Five-kingdom classification given by Robert Whittaker.

(5 marks)

- (b) Explain in brief the contributions of Louis Pasteur and Robert Koch.

(5 marks)

**Unit 2**

**Q. No.3**

- (a) Briefly explain the Bacterial cell structure with a suitable diagram. Distinguish between Gram Positive and Gram Negative bacteria.

(5 marks)

- (b) Describe in brief unique properties of the Viruses. How are Viruses classified?

(5 marks)

**OR**

**Q. No 3**

- (a) What is endospore? Draw the mechanisms of germination of endospore.

(5 marks)

- (b) Discuss in brief about various arrangements of Flagella on Bacterial cells with the help of a suitable diagram.

(5 marks)

**Unit 3**

**Q. No.4**

- (a) What are pure cultures and why are they important? (5 marks)
- (b) Discuss the various techniques of isolation of pure culture from microorganisms. (5 marks)

**OR**

**Q. No.4**

- (a) What is growth curves? Explain environmental factors affecting microbial growth. (5 marks)
- (b) Classify the microorganisms on the basis of nutritional requirements. (5 marks)

**Unit 4**

**Q. No.5**

- (a) What is the role of microbes in production of Pharmaceuticals industry? (5 marks)
- (b) Explain in brief the manufacturing procedures and production of viral vaccines. (5 marks)

**OR**

**Q. No.5**

- (a) Define microbial contamination and spoilage of pharmaceutical products. (5 marks)
- (b) Discuss the techniques of removal of microbial contamination in Pharma industry. (5 marks)

# CENTRAL UNIVERSITY OF HARYANA

## End Semester Examinations June/July 2023

Program: B. Voc. Biomedical Sciences

Semester: 3rd

Max. time: 3 hours

Max. Marks: 25

Course Title: Concepts in Chemistry-III

Course Code: BMS-303 (Reappear)

- 1) Attempt any five. (5X1=5)
- Explain the Saytzeff rule.
  - What is the Hofmann rule?
  - Why doesn't benzaldehyde undergo aldol condensation?
  - Which alkene gives only acetone on ozonolysis?
  - Name different types of organic reactions.
  - Out of SN1 and SN2, which follows single step mechanism?
  - What are condensation reactions?
- 2) Attempt any two. (2X5=10)
- Write the differences between unimolecular and biomolecular substitution reactions.
  - Write a short note on Pericyclic reactions.
  - Write a note on the Jablonskii diagram.
- 3) Attempt any two. (2X5=10)
- Write a short note on Ozonolysis.
  - Write a short note on Diels- alder Reaction.
  - Write a short note on Suzuki coupling Reaction.



# CENTRAL UNIVERSITY OF HARYANA

End Semester Examination (Reappear), June 2023

Programme: B. Voc. Biomedical Sciences

Semester: 3rd

Course code: BMS -201

Max. Marks: 50

Course Title: Pharmaceutical Physical Chemistry

Max. time: 3 hours

- 1) Attempt any **five**. (5X2=10)
- Show diagrammatically how the rate of a first-order reaction varies with the concentration of reactant.
  - Name two naturally occurring metalloporphyrins.
  - What are chelates? Give examples.
  - Differentiate between hydrosol and alcosol.
  - What is autocatalysis?
  - What is the effect of a catalyst on the rate of reaction?
  - What is the Tyndall effect.
- 2) Attempt any **Two**. (2X5=10)
- State the applications of chelates in pharmaceutical preparations?
  - Write the different forces which are responsible for the formation of complexes.
  - Write down the structure of EDTA. State its various applications.
- 3) Attempt any **Two**. (2X5=10)
- What is electrophoresis? How does this phenomenon provide information about the sign of the charge on particles?
  - What are emulsions? Give their classification.
  - What is dialysis? Explain the uses of Electrodialysis.
- 4) Attempt any **Two**. (2X5=10)
- Explain the factors that affect the rate of reaction.
  - Derive the integrated rate equation for a first-order reaction.
  - The rate constant for a second- order reaction is  $3.33 \times 10^{-2} \text{ dm}^3 \text{ mol}^{-1} \text{ s}^{-1}$ . If the initial concentration of the reactant is  $0.05 \text{ mol dm}^{-3}$ , calculate its half-life time.
- 5) Attempt any **Two**. (2X5=10)
- Derive Michalis Menton Equation.
  - Write a short note on Biocatalysis.
  - Write a short note on Phase Transfer Catalysis.





**IV Semester UG Term End Semester Examination June. 2023**  
**(Regular/Reappear)**

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<b>Name of Programme</b>	<b>: B. Voc (Industrial Waste Management)</b>		
<b>Year &amp; Semester</b>	<b>: June. 2023, Semester-IV</b>		
<b>Course Name</b>	<b>: Pollution Control and Management</b>		
<b>Course Code</b>	<b>:IWM-403</b>		
<b>Maximum Marks</b>	<b>:50</b>	<b>Duration</b>	<b>: 3Hrs</b>

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**Attempt any five questions selecting one question from each unit. Question 1 is compulsory.**

**Question 1.** Define/write a short note on any five:- (2x5)

- a. Comminutors
- b. Sedimentation
- c. Examples of air pollutants
- d. Chemical adsorption
- e. Adsorbents
- f. Mufflers
- g. Phytovolatilization
- h. Soil washing

**UNIT-I**

**Question 2.** (6, 4)

- A. Describe theory and principal of working for trickling filter. Write advantages and disadvantages of it.
- B. Explain working of RBC diagrammatically. Discuss advantages and disadvantages of this process.

**OR**

- A. What are the various sludge treatment methods? Discuss in detail.
- B. How nitrogen nutrients should be controlled on wastewater treatment?

## UNIT-II

### Question 3.

(6, 4)

- A. What are the 4 methods used for controlling gaseous air pollution?
- B. Discuss working of cyclone separator in detail with diagram.

OR

- A. Discuss various absorption techniques for removal of gaseous air pollutants.
- B. Illustrate the electrostatic precipitators and discuss its working.

## UNIT-III

### Question 4.

(6, 4)

- A. Differentiate between sound insulators and sound absorbers
- B. Differentiate between ear muffs and helmets.

OR

- A. Discuss various devices used in controlling noise from receiver.
- B. How you describe reactive silencers? In what purpose they are used?

## UNIT-IV

### Question. 5.

(6, 4)

- A. Differentiate between soil washing and soil leaching. Discuss various stages of soil washing in detail.
- B. What is phytocextraction method? How it helps in soil remediation?

OR

- A. What is phytovolatilization technique? Which plants are involved in phytoremediation?
- B. How phytostabilization technique helps in soil remediation?

**IV Semester UG Term End Semester Examination June/July, 2023**

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<b>Name of Programme</b>	<b>: B.Voc. (Industrial Waste Management)</b>	
<b>Year &amp; Semester</b>	<b>: June/July 2023, Semester-IV</b>	
<b>Course Name</b>	<b>: Solid Waste Management</b>	
<b>Course Code</b>	<b>: IWM- 402</b>	
<b>Maximum Marks</b>	<b>: 50</b>	<b>Duration: 3Hrs</b>

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**Attempt any five questions selecting one question from each unit. Question 1 is compulsory.**

**Question 1.** (2x5)

- a. What is the importance of daily cover in landfill?
- b. Differentiate between incineration and pyrolysis.
- c. Define putrescible and non-putrescible waste.
- d. Write a short note on refused derived fuel.
- e. What do you mean by baling of solid waste?
- f. What are essential components of a sanitary landfill?
- g. What is the importance of transfer stations?
- h. How is composting beneficial?

**UNIT-I**

**Question 2.** (6, 4)

- A. Classify solid waste. Explain various physical properties of solid waste.
- B. Explain hierarchy of waste management option.

OR

- A. What are the causes and risk associated with solid waste generation?
- B. Differentiate between ultimate and proximate analysis.

**UNIT-II**

**Question 3.** (6, 4)

- A. Explain various methods of handling and processing of solid waste.
- B. Write down the methods of collection of solid waste.

OR

- A. Explain thermal treatment methods for MSW.
- B. Write a note on plastic and metal recycling.

### UNIT-III

**Question 4.**

(6, 4)

- A. Explain different biochemical processes in landfill.
- B. Define leachate. What are the factors affecting leachate quality and quantity?

OR

- A. Explain designing and operation of sanitary landfill.
- B. Why are landfills environmentally harmful?

### UNIT-IV

**Question 5.**

(6, 4)

- A. What do you mean by compost? Explain various methods used for composting.
- B. What are the factors affecting composting?

OR

- A. Write a detailed note on vermicomposting.
- B. Explain aerobic and anaerobic composting.

IV Semester UG Term End Semester Examination June, 2023

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Name of Programme : B. Voc. (Industrial Waste Management)  
Year & Semester : June 2023, Semester-IV  
Course Name : Bioprocessing and utilization of agriculture waste  
Course Code : IWM-401  
Maximum Marks : 25 Duration: 3Hrs

Note: Attempt any five questions selecting one question from each unit. Question 1 is compulsory.

**Que. 1 Define/write a short note on any five: -** (1x5)

- (a) Agroforestry
- (b) Vermicomposting
- (c) Biogas
- (d) Fixed dome type biogas plant
- (e) Fermentation
- (f) Pyrolysis
- (g) Biofuel
- (h) Biomass pretreatment

**UNIT-I**

**Que. 2** (3,2)

- (a) Define biomass. Explain properties of biomass.
- (b) Write a note on various methods used for treatment of agricultural waste.

OR

- (a) Explain cell wall and plant anatomy. (5)

**UNIT-II**

**Que. 3** (3,2)

- (a) Explain steam explosion biomass pretreatment.
- (b) What is the purpose of biomass pretreatment?

OR

- (a) Write a detailed note on dilute acid pretreatment method.
- (b) Explain the advantages and disadvantages of biological pretreatment of biomass.

**UNIT-III**

**Que. 4** (5)

- (a) Explain various types of biogas plants in detail.

OR

- (b) Explain various types of biomasses cookstoves.

**UNIT-IV**

**Que. 5** (5)

- (a) Write bioethanol production process in detail with advantages & disadvantages.

OR

- (b) Explain CBP. Write advantages and challenges.



**VI Semester UG Term End Semester Examination June 2023**

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<b>Name of Programme</b>	<b>: B. Voc (Industrial Waste Management)</b>		
<b>Year &amp; Semester</b>	<b>: June 2023, Semester-VI</b>		
<b>Course Name</b>	<b>: Air and Soil Pollution Management</b>		
<b>Course Code</b>	<b>:IWM-601</b>		
<b>Maximum Marks</b>	<b>:25</b>	<b>Duration</b>	<b>: 3Hrs</b>

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**Attempt any five questions selecting one question from each unit. Question 1 is compulsory.**

**Question 1.** Define/write a short note on any five:- (1x5)

- a. Pollution standards of SO<sub>x</sub> and NO<sub>x</sub>
- b. Fertilizer as soil pollutants
- c. Insitu bioremediation
- d. Soil salinity
- e. Greenhouse gases
- f. Sources of vehicular emissions
- g. Heavy metals contaminants in soil
- h. Restoration of soil

**UNIT-I**

**Question 2.** (3, 2)

- A. Discuss various dry methods of desulphurization of flue gases.
- B. Discuss magnesium oxide scrubbing method for SO<sub>2</sub> control.

OR

- A. Write short note on coal gasification.
- C. How NO<sub>x</sub> emission can be controlled using the method- absorption by liquids? Discuss.

**UNIT-II**

**Question 3.** (3, 2)

- A. Discuss a case study of an industry on air pollution.

B. What are various types and characteristics of soil pollutants?

OR

C. What are the possible effects of sewage waste on soil characteristics? (3, 2)

D. What are various effects of soil pollutants on soil?

### UNIT-III

**Question 4.**

(3, 2)

A. What are point and non-point sources of soil pollution?

B. Discuss various effects of pesticides on soil.

OR

A. How industrial effluent increases soil pollution? Explain.

(5)

### UNIT-IV

**Question. 5.**

(3, 2)

A. How we can restore contaminated soil?

B. Describe various remedial measures for soil pollution

OR

C. Write a note on bioremediation of polluted soil.

D. Discuss various legal measures for land conservation.



**VI Semester UG Term End Semester Examination June. 2023**

**(Regular)**

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<b>Name of Programme</b>	<b>: B.Voc (Industrial Waste Management)</b>	
<b>Year &amp; Semester</b>	<b>: June. 2023, Semester-VI</b>	
<b>Course Name</b>	<b>: Environmental Policies and Laws</b>	
<b>Course Code</b>	<b>: IWM-602</b>	
<b>Maximum Marks</b>	<b>: 50</b>	<b>Duration: 3Hrs</b>

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**Attempt any five questions selecting one question from each unit. Question 1 is compulsory.**  
**(2x5)**

**Question 1: Very short type or definitions:**

- A. What is the purpose of Montreal Protocol?
- B. What are the five principles of UNFCCC?
- C. Write objectives of Air Act 1981.
- D. What is Article 48 A and Article 21?
- E. Write down the composition & classification of fly ash.
- F. Define Municipal solid waste.
- G. What are the characteristics of hazardous waste?
- H. Write any two biological methods for treatment of hazardous waste.

**UNIT-I**

**Question 2:** **(6,4)**

- A. What is Stockholm conference? Also discuss important principles and outcomes of Stockholm conference.
- B. What is the Vienna convention and why is it important?

OR

- A. Explain Earth Summit 2002 with objectives and important principles.
- B. Explain UNEP and its role.

**UNIT-II**

**Question 3:** **( 6,4)**

- A. What is Environment (Protection) Act 1986? Explain salient features and objectives.
- B. Write composition of CPCB.

OR

- A. Discuss power and functions of SPCB in Air act 1981.
- B. What are the objectives of water act 1974?

### UNIT-III

**Question 4:**

**(6,4)**

- A. Explain municipal solid waste management rules in detail.
- B. Discuss treatment and disposal methods of Biomedical waste.

OR

- A. Explain fly ash management rule 1999 in detail.
- B. What are the types of biomedical waste?

### UNIT-IV

**Question 5:**

**(6,4)**

- A. Define hazardous waste. Write characteristics and chemical treatment method of hazardous waste.
- B. What are duties and responsibility of the occupier for handling of the hazardous wastes?

OR

- A. Explain hazardous waste management rule 1989 in detail. (10)

V Semester UG Term End Semester Examination June, 2023

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Name of Programme	: B. Voc (Industrial Waste Management)		
Year & Semester	: June. 2023, Semester-V (Reappear)		
Course Name	: Wastewater Management		
Course Code	:IWM-502		
Maximum Marks	:50	Duration	: 3Hrs

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Attempt any five questions selecting one question from each unit. Question 1 is compulsory.

**Question 1.** Define/write a short note on any five:- (2x5)

- Name any two wastewater treatment technique
- RBC diagram.
- What do you mean by coagulation
- Write formula for COD and BOD calculations.
- Differentiate between MBR and MBBR techniques
- Advantages of ASP
- Oxidation pond diagram
- Chlorination

UNIT-I

**Question 2.** (6, 4)

- Explain self-purification of water bodies.
- What are various methods for sampling of wastewater?

OR

- Give discharge standards for BOD, COD, TSS, TDS.
- Explain various sources of water pollution.

UNIT-II

**Question 3.** (6, 4)

- Explain theory and design of sedimentation tank.

B. Differentiate between coagulation and flocculation processes. Write various criteria for selection of suitable coagulant.

OR

A. What are preliminary wastewater treatment techniques?

B. Differentiate between neutralization and equalization techniques used in treatment of wastewater

### UNIT-III

**Question 4.**

(6, 4)

A. Explain working of UASB reactor.

B. Explain basic theory and design of activated sludge process

OR

A. Discuss working of Trickling filter with diagram.

B. What is root zone treatment? How it helps in treatment of wastewater?

### UNIT-IV

**Question. 5.**

(6, 4)

A. Explain in detail about membrane process for wastewater treatment?

B. Differentiate between ozone/Uv and ozone/hydrogen peroxide techniques

OR

A. Differentiate between electrodialysis and ion exchange methods.

B. Explain various methods used in nitrogen and phosphorous removal.

**Vth Semester UG Term End Semester Examination June/July, 2023**

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<b>Name of Programme</b>	<b>: B.Voc. (Industrial Waste Management)</b>	
<b>Year &amp; Semester</b>	<b>: June/July 2023, Semester-V</b>	
<b>Course Name</b>	<b>: Instrumentation and techniques-II</b>	
<b>Course Code</b>	<b>: IWM-503</b>	
<b>Maximum Marks</b>	<b>: 50</b>	<b>Duration: 3Hrs</b>

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**Attempt any five questions selecting one question from each unit. Question 1 is compulsory.**

**Question 1: Define/Write a short note: (2x5)**

- A. Principle of centrifugation
- B. Magnification
- C. Normal phase chromatography
- D. Atomic absorption spectrophotometry
- E. Radioactive decay
- F. Elution
- G. Angular velocity
- H. Relative centrifugal force

**UNIT-I**

**Question 2: (6, 4)**

- A. Explain various types of centrifuges.
- B. Differentiate between differential centrifugation and density gradient centrifugation.

OR

- A. Write a detailed note on fixed angle and swinging bucket rotors.
- B. What are the characteristics of sedimentation coefficient?

**Question 3: (6, 4)**

- A. What is thin layer chromatography? Write down its principle, applications and advantages.
- B. Describe different types of paper chromatographic techniques.

OR

A. Explain principle, working and applications of high-pressure liquid chromatography (HPLC).

B. Explain the principle and working of Ion exchange chromatography.

### UNIT-III

**Question 4:**

**(6, 4)**

A. Write a detailed note on scanning electron microscopy.

B. Explain working principles of UV-Visible spectrophotometry.

OR

B. Write a detailed note on transmission electron microscopy.

B. Describe the instrumentation of flame photometer.

### UNIT-IV

**Question 5:**

**(6, 4)**

A. Define radioactivity. What are the various types of radioactive decay?

B. What is a Geiger-Muller counter? What are the limitations of GM counter?

OR

A. Explain principle and working of scintillation counter.

B. What are limitations and applications of scintillation counter?

**VI Semester UG Term End Semester Examination June/July, 2023**

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<b>Name of Programme</b>	<b>: B. Voc (Industrial Waste Management)</b>	
<b>Year &amp; Semester</b>	<b>: June/July2023, Semester-VI</b>	
<b>Course Name</b>	<b>: Hazardous, Radioactive &amp; E-waste Management</b>	
<b>Course Code</b>	<b>: IWM- 603</b>	
<b>Maximum Marks</b>	<b>:50</b>	<b>Duration: 3Hrs</b>

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**Attempt any five questions selecting one question from each unit. Question 1 is compulsory.**

**Question 1. Define/ Write a short note on any five: - (2x5)**

- a. Proximate analysis of hazardous waste
- b. ICRP
- c. TSDF concept
- d. Incineration and pyrolysis
- e. Sources of radioactive waste
- f. Hazardous waste landfill site selection
- g. E-waste recycling
- h. Regulatory aspects of hazardous waste

**UNIT-I**

**Question 2. (6,4)**

- A. Write a detailed note on sampling of hazardous waste.
- B. What are the characteristics of hazardous waste?

OR

- A. Write a note on transport, handling and storage of hazardous waste.
- B. Explain various physical treatment methods for hazardous waste.

**UNIT-II**

**Question 3.**

- A. What are different categories of biomedical wastes? (6,4)
- B. Explain design and operation of landfill for hazardous waste.

OR

- A. Explain various thermal treatment technologies of hazardous waste.
- B. Describe different methods of treatment used for managing biomedical waste?

### UNIT-III

#### Question 4.

(6, 4)

- A. What are the sources of radioactive waste? Distinguish between different types of radioactive waste.
- B. What are the radiation standards followed by ICRP?

OR

- A. Explain different exposure categories and situations.
- B. Describe disposal methods of radioactive wastes.

### UNIT-IV

#### Question. 5.

(6, 4)

- A. Write a detailed note on characteristics, generation & collection of e-waste.
- B. What is composition of e-waste? Explain Indian scenario of e-waste.

OR

- A. Explain various treatment levels of e-waste.
- B. What are the hazardous components present in e-waste?



**V Semester UG Term End Semester Examination June.,2023**

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**Name of Programme** : B. Voc. (Industrial Waste Management)  
**Year & Semester** : June. 2023, Semester-V  
**Course Name** : Industrial health and safety  
**Course Code** : IWM-501  
**Maximum Marks** : 25 **Duration: 3Hrs**

**Attempt any five questions selecting one question from each unit. Question 1 is compulsory.**

**Que. 1 Define/write a short note on any five: -** **(1x5)**

- (a) Brass founder's ague disease
- (b) Silicosis
- (c) Housekeeping
- (d) Physical hazard
- (e) SCBA
- (f) Formal inspection
- (g) OSHAS
- (h) Classification of hazardous waste

**UNIT-I**

**Que. 2** **(3,2)**

- (a) Define occupational disease. Write any four occupational disease.
- (b) Write a note on safety education.

OR

- (a) What is safety promotion? How do you promote safety?
- (b) What is the role of management in industrial safety?

**UNIT-II**

**Que. 3** **(3,2)**

- (a) Write a note on chemical hazards in details.
- (b) What is Ergonomics? Why it is important?

OR

- (a) Explain transportation and storage of hazardous chemicals in details.

- (b) How can manual handling risks be reduced?

### UNIT-III

**Que. 4**

**(3, 2)**

- (a) Discuss respiratory protective equipment in details.
- (b) Discuss types of safety inspections.

OR

- (a) What is safety audit? Why is safety audit important.
- (b) What are the need and scope of on-site emergency plan?

### UNIT-IV

**Que. 5**

**(5)**

- (a) Explain the Hazardous Waste (Management, Handling, Transboundary Movement) Rules, 2016 in details.

OR

- (b) Discuss the Factory Act 1948 in details.

**IV Semester UG Term End Semester Examination July, 2023**

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<b>Name of Programme</b>	<b>: B.Voc. (Industrial Waste Management)</b>
<b>Year &amp; Semester</b>	<b>: June 2023, Semester-IV</b>
<b>Course Name</b>	<b>: Solid Waste Management</b>
<b>Course Code</b>	<b>: IWM- 402</b>
<b>Maximum Marks</b>	<b>: 50</b>
	<b>Duration: 3Hrs</b>

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**Attempt any five questions selecting one question from each unit. Question 1 is compulsory.**

**Question 1.** (2x5)

- a. What are the steps for a landfill site selection?
- b. Define composting.
- c. What is the waste management hierarchy?
- d. Write a short note on refused derived fuel.
- e. Differentiate between ultimate and proximate analysis.
- f. Differentiate between area landfill and trench landfill.
- g. What is the importance of transfer stations?
- h. Write a short note on Coimbatore method of composting.

**UNIT-I**

**Question 2.** (6, 4)

- A. Explain various chemical properties of solid waste.
- B. What are the causes and harmful effects of solid waste generation?

OR

- A. Explain various physical characteristics of solid waste.
- B. What are the factors affecting type and quality of solid waste?

**UNIT-II**

**Question 3.** (6, 4)

- A. Explain various methods of handling and processing of solid waste.
- B. Describe waste to energy recovery system.

OR

- A. Explain collection methods and transportation of solid waste.
- B. Write a note on plastic and metal recycling.

### UNIT-III

**Question 4.**

(6, 4)

- A. Explain different biochemical processes in landfill.
- B. Define leachate. What are the factors affecting leachate quality and quantity?

OR

- A. Explain essential components and phased operation of sanitary landfill.
- B. What are the different types of liner system in landfill?

### UNIT-IV

**Question 5.**

(6, 4)

- A. Write a detailed note on Indore and Bangalore methods of composting.
- B. What are the factors affecting composting?

OR

- A. Write a detailed note on vermicomposting.
- B. Differentiate between aerobic and anaerobic mechanisms of composting.

**II Semester UG Term End Semester Examination July, 2023**

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<b>Name of Programme</b>	<b>: B.Voc. (Industrial Waste Management)</b>	
<b>Year &amp; Semester</b>	<b>: July 2023, Semester-II</b>	
<b>Course Name</b>	<b>: Instrumentation and techniques-1</b>	
<b>Course Code</b>	<b>: SLLL IWM 2201C 4004/IWM-201</b>	
<b>Maximum Marks</b>	<b>: 50</b>	<b>Duration: 3Hrs</b>

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**Attempt any five questions selecting one question from each unit. Question 1 is compulsory.**

**Question 1: Very short type or definitions:** **(2x5)**

- A. Define membrane filter.
- B. What are 4 states of water? At what temperature and pressure, it exists?
- C. Write sample preservation for COD and BOD analysis.
- D. Define UV sterilization.
- E. What is TDS? Write its acceptable limit in drinking water.
- F. Write functions of coarse focusing knob and fine focusing knob.
- G. Why buffer solutions are important?
- H. Differentiate between dark field and bright field microscopy.

**UNIT-I**

**Question 2:** **(6, 4)**

- A. Write collection and preservation methods of water sample.
- B. What are GLP? Write down significance of GLP.

OR

- A. What is the difference between high and low volume air samplers?
- B. Discuss soil sampling methods in detail.

**UNIT-II**

**Question 3:** **(6, 4)**

- A. Explain working, principle, applications and disadvantages of autoclave with diagram.
- B. Differentiate between dry heat and moist heat sterilization techniques.

OR

- A. Write physical and chemical properties of water.
- B. Define distillation and its types.

### UNIT-III

Question 4:

(6, 4)

- A. Define pH and how to measure it. Also explain pH meter in detail with diagram.
- B. Explain dissociation constant of acids and bases.

OR

- A. Define conductance. Also explain working of conductivity meter with diagram.
- B. Define DO and how to measure it?

### UNIT-IV

Question 5:

(6, 4)

- A. Discuss fluorescence microscopy with diagram.
- B. Write applications of UV- VIS spectroscopy.

OR

- A. Explain working of UV-VIS spectroscopy. Also draw a working diagram.
- B. Explain microscope parts with their functions.

**III<sup>rd</sup> Semester UG Term End Semester Examination June/July 2023**

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<b>Name of Programme</b>	<b>: B.Voc. (Industrial Waste Management)</b>
<b>Year &amp; Semester</b>	<b>: June/July 2023, Semester-III</b>
<b>Course Name</b>	<b>: Fundamentals of Mathematics and Statistics</b>
<b>Course Code</b>	<b>: IWM-302</b>
<b>Maximum Marks</b>	<b>: 25</b>
	<b>Duration: 3Hrs</b>

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**Attempt any five questions selecting one question from each unit. Question 1 is compulsory.**

**Question 1: Do any five:** **(1x5)**

- A. If  $A = \{10,12,14,16\}$ ,  $B = \{12,14,16,18\}$ ,  $C = \{18,20,22,24\}$ . Find  $A \cap (B \cup C)$ .
- B. Give an example of transitive relation.
- C. Find the probability of 'getting 5 on rolling a die'.
- D. What do you mean by an empty set?
- E. Differentiate between positive skewness and negative skewness.
- F. What is kurtosis in descriptive statistics?
- G. What is the range for following data set: 86,88,82,85,89?
- H. Determine the mean for following set of numbers: 6,2,5,5,8,4.

**UNIT-I**

**Question 2:** **(2, 3)**

- A. Aman spends 40% on food, 20% on house rent, 12% on travel and 10% on education. After all this expenditure, he saved 7200. Find the amount spent on travel.
- B. Find the compound interest of Rs.6000 for 2 years at 9% per annum.

OR

- A. If 600 glasses are bought at the rate of Rs. 12 and sold at the rate of Rs. 15 each. Find the overall profit and loss.
- B. Find two consecutive positive integers the sum of whose squares is 145.

**UNIT-II**

**Question 3:** **(2,3)**

- A. If  $\vec{a} = 5\hat{i} - \hat{j} - 3\hat{k}$  and  $\vec{b} = \hat{i} + 3\hat{j} - 5\hat{k}$ , then show that the vectors  $\vec{a} + \vec{b}$  and  $\vec{a} - \vec{b}$  are perpendicular.
- B. What are equally likely and complementary events?

OR

- A. Prove that the given point A, B, C are collinear using vector method: A (6, -7, -1), B (2, -3, 1) and C (4, -5, 0).
- B. Differentiate  $\sin(3x+5)$ .

### UNIT-III

**Question 4:**

(2, 3)

- A. What are the measures of central tendency?
- B. What is an ogive? How to draw less than ogive curve?

OR

- A. What is bar graph? What are the properties and uses of bar graph?
- B. Differentiate between line graph and pie chart.

### UNIT-IV

**Question 5:**

(2, 3)

- A. Determine the mean deviation for the data values 5, 3, 7, 8, 4, 9.
- B. What are the measures of dispersion?

OR

- A. Find the mean deviation about mean for the data: 38, 70, 40, 48, 55, 42, 63, 54, 46, 44.
- B. Calculate the standard deviation for the following distribution:

Class	30-40	40-50	50-60	60-70	70-80	80-90	90-100
Frequency	3	7	12	15	8	3	2



**III Semester UG Term End Semester Examination June/July,2023**

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**Name of Programme** : B. Voc. (Industrial Waste Management)

**Year & Semester** : June. 2023, Semester-III

**Course Name** : Environmental Chemistry

**Course Code** : IWM-301

**Maximum Marks** : 50 **Duration: 3Hrs**

Attempt any five questions selecting one question from each unit. Question 1 is compulsory.

**Que. 1** Define/write a short note on any five: - (2x5)

- (a) Mole.
- (b) Rate of reaction
- (c) Global warming.
- (d) Atmosphere composition.
- (e) Residence time
- (f) Water acidity.
- (g) Significance of C:N ratio.
- (h) BOD

**UNIT-I**

**Que. 2** (6,4)

- (a) What are zero order reactions? Also derive expressions for rate constant and half-life period of zero order reaction.
- (b) Explain Molality, Normality, Molarity.

OR

- (a) What is chemical equilibrium? Also discuss equilibrium constant.
- (b) Write factors affecting rate of reaction.

**UNIT-II**

**Que. 3** (6,4)

- (a) What is ozone layer depletion? Discuss factor responsible for ozone depletion and its effect on environment.

(b) Define Acid rain. Also write factor responsible for acid rain and its effect on environment.

OR

(a) What is green house effect? Discuss green house gases which are mainly responsible.

(b) Differentiate between London smog and photochemical smog.

### UNIT-III

**Que. 4**

**(6,4)**

(a) Define COD. What are determination methods of COD?

(b) Discuss water acidity and alkalinity in detail.

OR

(a) What is DO? What are determination methods of DO?

(b) Explain water pollution due to pesticides.

### UNIT-IV

**Que. 5**

**(6,4)**

(a) Define Trace elements. Write down importance and classification of trace elements in soil.

(b) Explain chemisorption and physisorption.

OR

(a) Define Soil. What are organic and inorganic components of soil?

(b) Write a note on cation exchange capacity.

**II Semester UG Term End Semester Examination June. 2023**

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<b>Name of Programme</b>	<b>: B. Voc (Industrial Waste Management)</b>		
<b>Year &amp; Semester</b>	<b>: June. 2023, Semester-II (Regular/Reappear)</b>		
<b>Course Name</b>	<b>: Environmental Pollution</b>		
<b>Course Code</b>	<b>: SLLL IWM 1203C2002 (Regular)/ IWM-203 (Reappear)</b>		
<b>Maximum Marks</b>	<b>:25</b>	<b>Duration</b>	<b>: 3Hrs</b>

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**Attempt any five questions selecting one question from each unit. Question 1 is compulsory.**

**Question 1.** Define/write a short note on any five: - (1x5)

- a. Air pollutants
- b. Classification of air pollutants according to state of matter
- c. Eutrophication
- d. Characteristics of domestic waste
- e. Herbicides
- f. Phon
- g. Noise pollution
- h. Loudness Units

**UNIT-I**

**Question 2.** (3, 2)

- A. What is water pollution? Discuss various sources of water pollution
- B. Differentiate between oxidation effects and nutrients effects of water pollution.

OR

- A. What are various control measures of water pollution?
- B. What are the discharge standards of BOD and COD?

**UNIT-II**

**Question 3.** (3, 2)

- A. How soil pollution occurs by use of agrochemicals like pesticides and fertilizers.
- B. How soil pollution increased by industrialization?

OR

- A. Write a note on soil erosion.
- B. What is acid rain? How it affect soil quality?

### UNIT-III

**Question 4.** (3, 2)

- A. What are various effects of air pollution on human health?
- B. Differentiate between primary air pollutants and secondary air pollutants.

OR

- A. What is plume behavior? Explain various types of plume behavior with their graphical representation.
- B. What are source correction method for air pollution?

### UNIT-IV

**Question. 5.** (3, 2)

- A. What are various sources of noise pollution? How noise pollution can be controlled?
- B. Explain various effects associated of noise pollution.

OR

- A. What are various effects of radioactive pollution?
- B. What are various control measure of radioactive pollution?

**CENTRAL UNIVERSITY OF HARYANA**  
**IV<sup>th</sup> Semester U.G. (B.Voc.) Term End Examination June 2023**

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<b>Programme</b>	:	<b>B. Voc. - Retail and Logistics Management (RLM)</b>
<b>Semester</b>	:	<b>IV (Regular/Reappear)</b>
<b>Paper Name</b>	:	<b>Consumer Behaviour</b>
<b>Paper Code</b>	:	<b>RLM-401</b>
<b>Maximum Marks</b>	:	<b>37.5</b>
<b>Maximum Time</b>	:	<b>3 hours</b>
<b>Batch</b>	:	<b>2021</b>

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**Note: Question No.1 is compulsory. Attempt one question from each Unit.**

Q1. Attempt any five questions: (5x1.5=7.5)

- a) What is the role of cross culture?
- b) What is the influence of social class on consumer behaviour?
- c) Why is consumer decision important?
- d) Highlight the various types of needs in consumer behaviour.
- e) Explain the characteristics of culture.
- f) What is meant by personality?
- g) Explain the role of reference groups in shopping.
- h) What are the psychological factors of consumer behaviour?

**UNIT I**

- Q2. A) What do mean by consumer behaviour? Explain the importance of understanding consumer behaviour in detail. (5)
- B) Explain the environmental factors affecting consumer behaviour. (2.5)

Or

- Q3.A) How is consumer behaviour influenced by relationships within families? Discuss with context to various family types. (5)
- B) Discuss the role of socio-cultural dimensions in consumer behaviour. (2.5)

**UNIT II**

- Q4.A) Discuss the factors influencing consumer buying decisions. (5)
- B) Why is market segmentation important? (2.5)
- Or
- Q5. A) What is market segmentation? What are different ways a market can be segmented? (5)
- B) What is life style? Explain the characteristics of lifestyle. (2.5)

**UNIT III**

Q6. A) Explain the Maslow's theory of Motivation. (5)

B) What is consumer learning? Explain the importance of learning behaviour. (2.5)

Or

Q7. A) What is consumer perception? Explain the consumer perception mechanism. (5)

B) Explain the individual determinants of consumer behaviour. (2.5)

**UNIT IV**

Q8. A) Explain the consumer behaviour models in detail. (5)

B) Discuss post purchase behaviour with examples. (2.5)

Or

Q9. A) What are the sources of information and the factors leading to high and low information search? (5)

B) Explain the consumer decision making process in brief. (2.5)

# CENTRAL UNIVERSITY OF HARYANA

VI<sup>th</sup> Semester U.G. (B.Voc.) Term End Examination June 2023

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Programme	:	B. Voc. Retail and Logistics Management (RLM)
Semester	:	VI (Regular/Reappear)
Paper Name	:	Entrepreneurship Development
Paper Code	:	RLM- 601
Max Marks	:	37.5
Max Time	:	3 hours
Batch	:	2020

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**Note: Question No.1 is compulsory. Attempt one question from each Unit.**

**Q1. Attempt any five questions:**

(5x1.5=7.5)

- Differentiate between entrepreneur and entrepreneurship.
- What are the major steps to become an entrepreneur?
- Mention the common pitfalls in business.
- Write a short note on business incubation.
- Enumerate different parts of feasibility analysis.
- What are the different motivating factors that motivate a person to become an entrepreneur?
- How to assess market for the proposed project?
- Mention the importance of finance for business.

## UNIT I

- Q2. a) Describe various problems encountered by entrepreneurs in India. (5)  
b) Highlight the scope of entrepreneurship development. (2.5)

**Or**

- Q3. a) Discuss various concepts of entrepreneurial traits. (5)  
b) Elaborate various types of entrepreneurs. (2.5)

## UNIT II

- Q4. a) Describe the creativity and entrepreneurial plan for starting your business. (5)  
b) What is the role of venture capital for the growth of startup companies? (2.5)

**Or**

- Q5 a) Elaborate various growth strategies for the development of small business. (5)  
b) What is the role of creativity and innovation in business? (2.5)

## UNIT III

- Q6 a) What is business plan? Why entrepreneurs need business plan? (5)  
b) Mention the importance of location for the business. (2.5)

**Or**

- Q7 a) Enumerate the various steps involved in starting a business venture. (5)  
b) Discuss the procedure of registering a new firm. (2.5)

**UNIT IV**

- Q8 a) What are the different government policies launched for development and promotion of Small Scale Industries (SSIs)? (5)  
b) Define the role of women entrepreneurship in the development of Small Scale Industries (SSIs). (2.5)

**Or**

- Q9 a) Mention the advantages and disadvantages of family firms. (5)  
b) What is the difference between professionalism and family entrepreneurship? (2.5)



**CENTRAL UNIVERSITY OF HARYANA**  
**II Semester U.G. (B.Voc.) Term End Examination July 2023**

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<b>Programme</b>	:	<b>B. Voc. - Retail and Logistics Management (RLM)</b>
<b>Semester</b>	:	<b>II (Regular/Reappear)</b>
<b>Paper Name</b>	:	<b>Organizational Behaviour</b>
<b>Paper Code</b>	:	<b>SLLL RLM 1203 C 2103 / RLM 203</b>
<b>Maximum Marks</b>	:	<b>37.5</b>
<b>Maximum Time</b>	:	<b>3 hours</b>
<b>Batch</b>	:	<b>2022</b>

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**Note: Question No.1 is compulsory. Attempt one question from each Unit.**

Q1. Attempt any five questions: (5x1.5=7.5)

- a) What are the determinants of personality?
- b) Explain any three fundamental concepts related to organizational behaviour.
- c) Write a short note on Halo effect.
- d) What do you understand by perception?
- e) Write a short note on leaders versus managers.
- f) What are the qualities of effective leader?
- g) What do you understand by management of stress?
- h) What are the sources of stress in the organization?

**UNIT I**

- Q2. A) What is organization? Explain the need and importance of organizational behaviour. (5)  
B) What are the factors influencing personality? (2.5)

or

- Q3. A) Discuss in detail the contribution of various disciplines to organizational behaviour. (5)  
B) What are the challenges & opportunities of organizational behaviour? (2.5)

**UNIT II**

- Q4. A) Describe the link between perception and individual decision making. (5)  
B) Explain perceptual process with suitable example. (2.5)

or

- Q5. A) Elaborate the meaning, types and components of attitude. (5)  
B) Differentiate between terminal value and instrumental value. (2.5)

**UNIT III**

- Q6. A). Discuss meaning, nature and importance of motivation. (5)  
B). Elucidate Herzberg's two factor theory. (2.5)

or

- Q7. A). What is leadership? Explain its types and styles. (5)  
B). Explain Reinforcement theory. (2.5)

**UNIT IV**

- Q8. A). Explain the role of Group Dynamics in an organisation. Also discuss various stages of Group Development. (5)  
B). Differentiate between formal and informal groups. (2.5)

or

- Q9. A). Explain the concept of group cohesiveness. Also discuss its features. (5)  
B). What do you understand by team work. Explain its importance? (2.5)

**CENTRAL UNIVERSITY OF HARYANA**  
**IV Semester U.G. (B.Voc.) Term End Examination June 2023**

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<b>Programme</b>	<b>:</b>	<b>B.Voc. - Retail and Logistics Management (RLM)</b>
<b>Semester</b>	<b>:</b>	<b>IV (Regular/Reappear)</b>
<b>Paper Name</b>	<b>:</b>	<b>Business Environment</b>
<b>Paper Code</b>	<b>:</b>	<b>RLM 403</b>
<b>Maximum Marks</b>	<b>:</b>	<b>37.5</b>
<b>Maximum Time</b>	<b>:</b>	<b>3 hours</b>
<b>Batch</b>	<b>:</b>	<b>2021</b>

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**Note: Question No.1 is compulsory. Attempt one question from each Unit.**

Q1. Attempt any five questions: (5x1.5=7.5)

- a) What is included in the 'Technological Environment' of business? State.
- b) Explain the role of political environment in shaping the business.
- c) What is the main goal of monetary policy?
- d) Write a short note on Reserve Bank of India.
- e) Write a short note on special economic zone.
- f) What are the key focus areas of the Competition Act, 2002?
- g) What are the impacts of Exim policy?
- h) What are the FDI related problems in India?

**UNIT-I**

- Q2. A) What is meant by 'business environment'? Discuss external environment of business. (5)  
B) Why is business environment called dynamic? State. (2.5)

Or

- Q3. A) "Management of every enterprise can be benefited from being aware of different factors of business environment". Explain any four such factors. (5)  
B) Discuss PEST analysis of environmental scanning. (2.5)

**UNIT-II**

- Q4. A) Describe various objectives and functions of Securities & Exchange Board of India (SEBI). (5)  
B) What are the elements of the monetary policy of India? (2.5)

Or

- Q5. A) Discuss various objectives and techniques of fiscal policy of India. (5)  
B) Describe any two stock exchange of India. (2.5)

**UNIT-III**

- Q6. A) Explain the role of liberalization for the growth of business. (5)  
B) Clearly explain the differences between privatisation, liberalisation and deregulation. (2.5)

Or

- Q7. A) Elaborate main provisions of Competition Act, 2002. (5)  
B) What is the impact of privatization on Indian economy? (2.5)

**UNIT-IV**

- Q8. A) Describe different challenges and opportunities for MNCs in India? (5)  
B) What are the benefits of foreign direct investment in the economy? (2.5)

Or

- Q9. A) Discuss the positive and negative impacts of globalisation on Indian economy. (5)  
B) How does EXIM bank play a crucial role in export promotion in the country? (2.5)

**CENTRAL UNIVERSITY OF HARYANA**  
**VI<sup>th</sup> Semester U.G. (B.Voc.) Term End Examination June 2023**

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<b>Programme</b>	:	<b>B. Voc. - Retail and Logistics Management (RLM)</b>
<b>Semester</b>	:	<b>VI (Regular/Reappear)</b>
<b>Paper Name</b>	:	<b>Customer Relationship Management</b>
<b>Paper Code</b>	:	<b>RLM-602</b>
<b>Maximum Marks</b>	:	<b>37.5</b>
<b>Maximum Time</b>	:	<b>3 hours</b>
<b>Batch</b>	:	<b>2020</b>

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**Note: Question No.1 is compulsory. Attempt one question from each Unit.**

Q1. Attempt any five questions: (5x1.5=7.5)

- a) What are the significant advancements in the field of CRM??
- b) Write a short note on globalised scenario of business.
- c) Write any three reasons for the adoption of CRM.
- d) Explain the functions of CRM in any firm.
- e) What is meant by synchronization?
- f) What is Computer Telephony Integration (CTI)?
- g) What is the role of CRM in Insurance industry?
- h) What do you understand by brand building?

**UNIT I**

Q2. A) What do you understand by CRM? Write its scope & importance . (5)

B) Explain emergence of CRM practise in modern business. (2.5)

Or

Q3. A) Highlight the concept of Touch Point Analysis (TPA)? Discuss various steps involved in TPA function. (5)

B) How did CRM evolved? (2.5)

**UNIT II**

Q4. A) Describe the concept of Sales Force Automation. Write its features, advantages & disadvantages. (5)

B) Explain various models of CRM? (2.5)

Or

Q5. A) Discuss various emerging technological advancements in Sales Force Automation? (5)

B) How will you help a firm going from a crisis of customers' dissatisfaction? (2.5)

### UNIT III

Q6. A). Elaborate the role of IT & Internet in CRM. (5)

B). Examine the importance of customization and the role of training in implementation of e-CRM. (2.5)

Or

Q7. A). Discuss the concept of Data Mining and Data warehousing for CRM. (5)

B). What are the functional components of CRM? (2.5)

### UNIT IV

Q8. A). Discuss the role of CRM in tour and travel industry. (5)

B). Write a note on application of software for effective CRM. (2.5)

Or

Q9. A). Highlight the recent trends of CRM in case of Telecommunications industry. (5)

B). How far is CRM successful in giving customer loyalty? (2.5)

**CENTRAL UNIVERSITY OF HARYANA**  
**IV Semester U.G. (B.Voc.) Term End Examination June 2023**

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<b>Programme</b>	:	<b>B.Voc. - Retail and Logistics Management (RLM)</b>
<b>Semester</b>	:	<b>IV (Regular/Reappear)</b>
<b>Paper Name</b>	:	<b>Human Resource Management</b>
<b>Paper Code</b>	:	<b>RLM 404</b>
<b>Maximum Marks</b>	:	<b>37.5</b>
<b>Maximum Time</b>	:	<b>3 hours</b>
<b>Batch</b>	:	<b>2021</b>

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**Note: Question No.1 is compulsory. Attempt one question from each Unit.**

Q1. Attempt any five questions: (5x1.5=7.5)

- a) Explain the nature of HRM.
- b) Explain the role of HR managers in present times.
- c) What are the components of job analysis?
- d) What is job description?
- e) What is the importance of training?
- f) What are the various methods of development?
- g) Explain the importance of fringe benefits.
- h) Explain the difference between incentives and rewards.

**UNIT I**

- Q2. A) Discuss the recent trends or emerging issues in HRM. (5)  
B) Explain the objectives of HRM. (2.5)

Or

- Q3. A) Discuss the changing role of HRM. Explain the difference between HRM and personnel management. (5)  
B) What are the challenges faced by HR managers in present time? (2.5)

**UNIT II**

- Q4. A) Define job specification. How is it different from job description? (5)  
B) Discuss the techniques used for collecting data for job analysis. (2.5)

Or

- Q5. A) Justify "Recruitment is positive & selection is a negative process". (5)  
B) Enumerate the methods of recruitment. (2.5)

### UNIT III

- Q6. A) Discuss the steps of scientific selection process. (5)  
B) What is the difference between preliminary interview and decision-making interview? (2.5)  
Or
- Q7. A) Explain the difference between on-the-job training and off-the-job training with examples. (5)  
B) Discuss why training is important for employees? (2.5)

### UNIT IV

- Q8. A) Discuss 360 degree performance appraisal system. Also explain methods of job evaluation. (5)  
B) What are the objectives of performance appraisal system? (2.5)  
Or
- Q9. A) Discuss types, importance and components of compensation management. (5)  
B) Explain advantages of modern methods of appraisal over traditional methods of appraisal. (2.5)



**CENTRAL UNIVERSITY OF HARYANA**  
**V<sup>th</sup> Semester U.G. (B.Voc.) Term End Examination June 2023**

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<b>Programme</b>	:	<b>B. Voc. - Retail and Logistics Management (RLM)</b>
<b>Semester</b>	:	<b>V (Reappear)</b>
<b>Paper Name</b>	:	<b>Soft Skills &amp; Personality Development</b>
<b>Paper Code</b>	:	<b>RLM-504</b>
<b>Maximum Marks</b>	:	<b>37.5</b>
<b>Maximum Time</b>	:	<b>3 hours</b>
<b>Batch</b>	:	<b>2020</b>

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**Note: Question No.1 is compulsory. Attempt one question from each Unit.**

Q1. Attempt any five questions: (5x1.5=7.5)

- a) Mention the characteristics of introvert personality.
- b) How do you motivate yourself to get work done after trying many things and failing over and over again?
- c) What are intrapersonal skills?
- d) What are the benefits of practicing positive thinking?
- e) What are self awareness skills?
- f) Mention the importance of time management.
- g) How will you sell things to your friends or family?
- h) Highlight the concept of active listening skills.

**UNIT I**

Q2. A) What is group discussion? What are the do's and don'ts of group discussion? (5)

B) Explain the concept of performance appraisal. (2.5)

or

Q3. A) What is personality development? Describe five factor model of personality development. (5)

B) Describe the impromptu talks in brief. (2.5)

**UNIT II**

Q4. A) Explain different types of leadership theories. (5)

B) What are interpersonal skills and how to improve it? (2.5)

or

Q5. A) Write a note on trust, expectations, feedback and compatibility for building a team. (5)

B) What is team leadership? Explain how to develop your team leadership skills. (2.5)

**UNIT III**

Q6. A) What is selling strategy? Explain the selling strategies for peer groups. (5)

B) Explain cross culture skills and its importance in today's era. (2.5)

or

- Q7. A) Discuss different types of negotiation strategies. (5)  
B) Differentiate between conceptual selling and strategic selling. (2.5)

#### UNIT IV

- Q8. A) What are soft skills? Explain the determinants of soft skills. (5)  
B) Differentiate between soft skills and hard skills. (2.5)

or

- Q9. A) What is effective communication? Explain the role of effective communication in soft skills improvement. (5)  
B) Enumerate the importance of hard skill. (2.5)

**CENTRAL UNIVERSITY OF HARYANA**  
**V<sup>th</sup> Semester U.G. (B.Voc.) Term End Examination June 2023**

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<b>Programme</b>	:	<b>B. Voc. Retail and Logistics Management (RLM)</b>
<b>Semester</b>	:	<b>V (Reappear)</b>
<b>Paper Name</b>	:	<b>Values and Ethics in Business</b>
<b>Paper Code</b>	:	<b>RLM-502</b>
<b>Max Marks</b>	:	<b>37.5</b>
<b>Max Time</b>	:	<b>3 hours</b>
<b>Batch</b>	:	<b>2020</b>

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**Question No.1 is compulsory. Attempt one question from each Unit.**

**Q1. Attempt any five questions:**

**(5x1.5=7.5)**

- a) What lessons you learn from Lord Krishna?
- b) What are the elements of Indian ethos?
- c) What are the teachings of Holy Quran?
- d) What are the management lessons you got from Indian scriptures?
- e) What is the role of corporate governance?
- f) What is the law of karmas?
- g) Define trademark.
- h) Write a short note on business level strategy.

**UNIT I**

Q2. a) Differentiate between Western Management approach and Indian Value based Management approach. (5)

b) What are the lessons you learnt from Vedas? (2.5)

**or**

Q3. a) Elaborate the need and purpose of Indian ethos. (5)

b) What are the lessons you learnt from Upanishads? (2.5)

**UNIT II**

Q4. a) What do you mean by Business Ethics? Discuss its principles. (5)

b) How do you handle a situation where something is not in compliance with the ethical standards? (2.5)

**or**

Q5. a) Discuss moral and ethical issues related to various operations in an organization. (5)

b) How business ethics are related with values? (2.5)

### UNIT III

- Q6. a) What is information technology governance? Discuss how it works. (5)  
b) What social responsibility does a business have? (2.5)
- or**
- Q7. a) Who should be held responsible for business ethics? Discuss in detail with suitable example. (5)  
b) How can you apply for a patent? (2.5)

### UNIT IV

- Q8. a) Discuss the principles of total quality management. (5)  
b) Explain the nature and components of strategy. (2.5)
- or**
- Q9. a) Explain the functions and levels of corporate strategy. (5)  
b) What are the generic steps for development and execution of action plans in benchmarking? (2.5)

**CENTRAL UNIVERSITY OF HARYANA**  
**V<sup>th</sup> Semester U.G. (B.Voc.) Term End Examination June 2023**

<b>Programme</b>	:	<b>B. Voc. - Retail and Logistics Management (RLM)</b>
<b>Semester</b>	:	<b>V (Reappear)</b>
<b>Paper Name</b>	:	<b>ESSENTIALS OF E- COMMERCE</b>
<b>Paper Code</b>	:	<b>RLM-503</b>
<b>Maximum Marks</b>	:	<b>37.5</b>
<b>Maximum Time</b>	:	<b>3 hours</b>
<b>Batch</b>	:	<b>2020</b>

**Question No.1 is compulsory. Attempt one question from each unit.**

**Q1. Attempt any five questions:** (5x1.5=7.5)

- a) Give the advantages of infra and inter organizational commerce.
- b) What is e- retailing?
- c) What is consumer-oriented e-commerce?
- d) What do understand by B2G model?
- e) What is document library?
- f) What do you mean by e-wallet?
- g) What are the threats to online payments?
- h) What are the challenges associated with credit card payment?

**UNIT I**

- Q2. A) Enumerate various advantages and disadvantages of e-commerce to customers. (5)  
B) Explain various security methods of e-commerce. (2.5)

or

- Q3. A) Describe history and origin of e-commerce. (5)  
B) Discuss main components of e-commerce infrastructure. (2.5)

**UNIT II**

- Q4. A) What is B2C in e-commerce? What are the various business model of B2C? (5)  
B) Explain Customer to Business (C2B) Model. (2.5)

or

- Q5. A) Discuss how economic factor affect e-commerce. (5)  
B) How online grocery suppliers make your life easy? (2.5)

**UNIT III**

- Q6. A) What is online marketing? Discuss its strength. (5)  
B) What are the various marketing strategies used in push marketing? (2.5)  
or  
Q7. A) Differentiate push and pull strategies in marketing with suitable example? (5)  
B) Discuss various disadvantages of online retailing. (2.5)

**UNIT IV**

- Q8. A) Discuss the risk of payment conflicts in electronic payment systems. (5)  
B) What is the usefulness of e-CRM in business? (2.5)  
or  
Q9. A) Explain different types of electronic payment methods. (5)  
B) What are the advantages and disadvantages of Electronic Payment System? (2.5)

# CENTRAL UNIVERSITY OF HARYANA

## V<sup>th</sup> Semester U.G. (B.Voc.) Term End Examination June 2023

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Programme	:	B. Voc. Retail and Logistics Management (RLM)
Semester	:	V (Reappear)
Paper Name	:	Advertisement and Sales Promotion
Paper Code	:	RLM-501
Max Marks	:	37.5
Max Time	:	3 hours
Batch	:	2020

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Question No.1 is compulsory. Attempt one question from each Unit.

Q1. Attempt any five questions:

(5x1.5=7.5)

- What is the importance of advertising?
- What is included and excluded from advertising?
- Define advertising budget.
- What is the importance of effective media planning?
- What is the role of web advertisements in current business?
- What are the advantages of radio advertisement?
- What do you understand by trade shows and sales contests?
- Define the importance of sales promotion for society/nation.

### UNIT-I

- Q2. a) What are the different roles and functions of an advertising agency? (5)  
b) Explain the benefits of advertising to the various section of society. (2.5)

or

- Q3. a) Discuss the social and legal aspects of advertisements. (5)  
b) "Money spent on advertisement is wasteful." Do you agree? Give reasons. (2.5)

### UNIT-II

- Q4. a) What is meant by media planning? What issues are considered in the process of advertisement planning? (5)  
b) What are the problems in media planning? (2.5)

or

- Q5. a) Discuss various media planning indicators. (5)  
b) Explain the role of media strategy in advertising. (2.5)

**UNIT-III**

- Q6. a) Discuss DAGMAR approach for setting advertising objectives. (5)  
b) What are the various attributes of effective advertising copy? (2.5)

**or**

- Q7. a) Discuss the advantages and disadvantages of Television media, Radio media and Internet Media. (5)  
b) Explain the process of copy writing. (2.5)

**UNIT-IV**

- Q8. a) Explain different sales promotional tools which are useful for dealers. (5)  
b) Explain the role of sales promotion in shortage economy. (2.5)

**or**

- Q9. a) Why sales promotion is important? Discuss. (5)  
b) Explain the demerits of online sales promotion? (2.5)



**CENTRAL UNIVERSITY OF HARYANA**  
**II Semester U.G. (B.Voc.) Term End Examination July 2023**

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<b>Programme</b>	:	<b>B. Voc. - Retail and Logistics Management (RLM)</b>
<b>Semester</b>	:	<b>II (Regular/Reappear)</b>
<b>Paper Name</b>	:	<b>Principles of Marketing</b>
<b>Paper Code</b>	:	<b>SLLL RLM 12 01 C 2103</b>
<b>Maximum Marks</b>	:	<b>37.5</b>
<b>Maximum Time</b>	:	<b>3 hours</b>
<b>Batch</b>	:	<b>2022</b>

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**Note: Question No.1 is compulsory. Attempt one question from each Unit.**

Q1. Attempt any five questions: (5x1.5=7.5)

- a) What is the most important feature of guerrilla marketing?
- b) How do customers perceive a brand?
- c) What is culture in marketing management?
- d) How do social media benefit a business?
- e) Explain publicity.
- f) How does marketing provide value?
- g) Explain the different types of labels.
- h) What do you mean by customer feedback?

**UNIT I**

- Q2. A) Define marketing environment? Discuss the factors that constitute marketing environment. (5)  
B) Differentiate between marketing and selling. (2.5)

OR

- Q3.A). What do you mean by marketing? Describe the features of marketing. (5)  
B). Why does marketing cost so much? Is marketing worth it? (2.5)

**UNIT II**

- Q4.A. What is market segmentation, and why is it crucial in today's market? Compare and contrast the four most commonly used segmentation variables in consumer markets, and provide examples to support your answer. (5)  
B) What lifestyle means? What are the characteristics of lifestyle marketing? (2.5)

OR

- Q5. A) What do you mean by consumer behaviour? Explain the factors that influence consumer buying decision. (5)  
B) Define what is targeting and describe how important this concept is to online business. (2.5)

### UNIT III

- Q6. A) What is pricing? Explain the different types of pricing strategies. (5)  
B) Define the concept of product. Also explain classifications of product. (2.5)

OR

- Q7. A) Elaborate the concept of new product development with suitable example. (5)  
B) Discuss different types of packaging strategies. (2.5)

### UNIT IV

- Q8. A) What is promotion and explain the importance of promotion? (5)  
B) Discuss services of retailer to manufacturer and wholesaler (2.5)

OR

- Q9. A) Write a note with suitable example on the following concepts:-  
i) Personal Selling  
ii) Direct marketing (5)  
B) Explain the functions of distribution channels. (2.5)

**CENTRAL UNIVERSITY OF HARYANA**  
**II Semester U.G. (B.Voc.) Term End Examination July 2023**

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<b>Programme</b>	:	<b>B. Voc. - Retail and Logistics Management (RLM)</b>
<b>Semester</b>	:	<b>II (Regular)</b>
<b>Paper Name</b>	:	<b>Business Economics</b>
<b>Paper Code</b>	:	<b>SLLL RLM 1204 C 2103</b>
<b>Maximum Marks</b>	:	<b>37.5</b>
<b>Maximum Time</b>	:	<b>3 hours</b>
<b>Batch</b>	:	<b>2022</b>

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**Note: Question No.1 is compulsory. Attempt one question from each Unit.**

Q1. Attempt any five questions: (5x1.5=7.5)

- a) Why demand curve slopes downward?
- b) Explain the meaning of opportunity cost with example.
- c) Differentiate between direct and derived demands.
- d) What do you understand by explicit cost and implicit cost?
- e) Highlight the meaning of production cost.
- f) Write a short note on determinants of supply.
- g) Mention the types of market structure.
- h) What do you understand by kinked demand curve?

**UNIT I**

- Q2. A) Discuss the fundamental principles of business economics. (5)  
B) Explain the role and responsibilities of business economist. (2.5)

or

- Q3. A) Discuss the meaning, nature and scope of business economics. (5)  
B) Differentiate between Cardinal and Ordinal utility. (2.5)

**UNIT II**

- Q4. A) Enumerate the meaning, determinants and importance of demand. (5)  
B) Explain various types of demands. (2.5)

or

- Q5. A) Explain the types & degrees of elasticity of demand. (5)  
B) Explain the market demand and draw demand curve with the help of below table:- (2.5)

Price	Quantity demand by A	Quantity demand by B
100	1	2
90	2	3
80	4	5
70	6	7

**UNIT III**

- Q6. A). Discuss cost-output relationships in the short run and long run. (5)  
B). Describe the concept of short run and long run production functions. (2.5)

or

- Q7. A). Discuss the concept of cost analysis. Also explain types of costs. (5)  
B). Enumerate the law of variable proportions. (2.5)

**UNIT IV**

- Q8. A). Elaborate the concept and features of perfect competition. (5)  
B). Explain long run equilibrium of a monopoly firm. (2.5)

or

- Q9. A). Describe the meaning and features of oligopoly market. (5)  
B). Explain the difference between monopoly & monopolistic competition. (2.5)

**CENTRAL UNIVERSITY OF HARYANA**  
**II<sup>nd</sup> Semester U.G. (B.Voc.) Term End Examination July, 2023**

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<b>Programme</b>	:	<b>B. Voc. – Industrial Waste Management (IWM)</b>
<b>Semester</b>	:	<b>II (Regular)</b>
<b>Course Name</b>	:	<b>Environmental Science</b>
<b>Course Code</b>	:	<b>SLLL IWM 2202C 4004/IWM-202</b>
<b>Maximum Marks</b>	:	<b>50</b>
<b>Maximum Time</b>	:	<b>3 hours</b>

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**Attempt any five questions selecting one question from each unit. Question 1 is compulsory.**

**Question 1: Define/Write a short note: (2x5)**

- a) Energy flow in an ecosystem
- b) Ecological succession
- c) Biomagnification
- d) Chernobyl nuclear disaster
- e) Deforestation
- f) Desertification
- g) India as a megadiversity nation
- h) Population explosion

**UNIT-I**

**Question 2: (6,4)**

- A. What is the aquatic ecosystem? Discuss any four types of aquatic ecosystem.
- B. How do different disciplines contribute to environmental studies?

OR

- A. What are ecological pyramids? Discuss different types of ecological pyramids.
- B. Explain the nitrogen cycle with the help of a diagram.

**UNIT-II**

**Question 3: (6,4)**

- A. Define biodiversity. Explain genetic diversity, species diversity and ecosystem diversity.
- B. What are the hotspots of biodiversity? Discuss the hotspots found in India and their salient features.

OR

- A. Write, in detail, types and control measures of soil erosion.
- B. What is meant by in situ and ex situ conservation of biodiversity? Give examples.

### UNIT-III

**Question 4:** (6,4)

- A. Briefly describe the sources, effects and control of water pollution.
- B. Discuss the salient features of Air (Prevention and Control of Pollution) Act, 1974.

OR

- A. Define radioactivity and its types. Which type of damage can be caused by ionizing radiations?
- B. What are the causes and harmful effects of acid rain?

### UNIT-IV

**Question 5:** (6,4)

- A. What is meant by population explosion? What are the factors influencing population size?
- B. Write short note on Chipko movement and silent valley movement.

OR

- A. Explain the types of disasters and disaster management cycle.
- B. What are the different methods to propagate environment awareness in the society?

**CENTRAL UNIVERSITY OF HARYANA**  
**II Semester U.G. (B.Voc.) Term End Examination July 2023**

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<b>Programme</b>	:	<b>B.Voc. - Retail and Logistics Management (RLM)</b>
<b>Semester</b>	:	<b>II (Regular/Reappear)</b>
<b>Paper Name</b>	:	<b>Introduction to Logistics Management</b>
<b>Paper Code</b>	:	<b>SLLL RLM 12 02 C 2103</b>
<b>Maximum Marks</b>	:	<b>37.5</b>
<b>Maximum Time</b>	:	<b>3 hours</b>
<b>Batch</b>	:	<b>2022</b>

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**Note: Question No.1 is compulsory. Attempt one question from each Unit.**

Q1. Attempt any five questions: (5×1.5=7.5)

- a) Explain the importance of logistics.
- b) Mention the subsectors of logistics.
- c) What is the role of ERP in e-procurement?
- d) Explain the features of e-logistics.
- e) What does the right product mean in the seven R concept?
- f) What is the role of a logistician?
- g) Explain the barriers to global logistics.
- h) Define liquid logistics.

**UNIT I**

- Q2. A) Discuss history and evolution of logistics. (5)  
B) Explain the objectives and principles of logistics. (2.5)

Or

- Q3. A) Discuss the major factors that influence the logistics cost. (5)  
B) What are the different types of retail logistics? (2.5)

**UNIT II**

- Q4. A) What is the difference between logistics and transport? Explain with suitable example. (5)  
B) How ERP optimizes procurement processes? (2.5)

Or

- Q5. A) Enumerate the different models of logistics management. (5)  
B) What is logistics 1PL, 2 PL and 3PL. (2.5)

### UNIT III

Q6. A) Discuss the role of logistics managers in strategic decisions. Also explain lean and agile strategies. (5)

B) What are the objectives of customer service in logistics? (2.5)

Or

Q7. A) Elaborate the logistics related elements of customer service? (5)

B) Explain the 7Rs of logistics management. (2.5)

### UNIT IV

Q8. A) What do you understand by global logistics? Discuss various strategic issues related to global logistics. (5)

B) What is the role of Exim logistics in business? (2.5)

Or

Q9. A) Discuss the different modes of transportation in global logistics. (5)

B) What are the factors that affect global logistic system? (2.5)



# CENTRAL UNIVERSITY OF HARYANA

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<b>Programme</b>	:	<b>B. Voc. Retail and Logistics Management (RLM)</b>
<b>Semester</b>	:	<b>IV (Regular)</b>
<b>Paper Name</b>	:	<b>Human Resource Management</b>
<b>Paper Code</b>	:	<b>RLM-404</b>
<b>Max Marks</b>	:	<b>37.5</b>
<b>Max Time</b>	:	<b>3 hours</b>
<b>Batch</b>	:	<b>2020</b>

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**Question No.1 is compulsory. Attempt one question from each unit.**

**Q1. Attempt any five questions:**

**(5x1.5=7.5)**

- Define Human Resource Management.
- What is the impact of technology on HRM?
- Define job enrichment.
- Point out the three factors affecting recruitment.
- State the purpose of medical examination in selection.
- What is an interview?
- Define fringe benefit.
- Explain ranking method of job evaluation.

## UNIT I

- Q2. a) Discuss recent trends or emerging issues in HRM. In which particular business area HR can play its role? **(5)**
- b) What are the challenges faced by HR managers in present time? **(2.5)**

or

- Q3) a) What are the roles of Human Resource Management? Explain the benefits of those to the Organisation. **(5)**
- b) Differentiate HRM and personnel management. **(2.5)**

## UNIT II

- Q4. a) "Job analysis is the most basic personnel management function." Discuss. **(5)**
- b) Differentiate job description and job specification. **(2.5)**

or

- Q5. a) Elaborate different sources of recruitment. **(5)**
- b) Explain techniques used for collecting data for job analysis. **(2.5)**

**UNIT III**

- Q6. a) What do you understand by selection process? Discuss various steps involved in it. (5)  
b) What do you understand by placement and orientation? (2.5)  
or  
Q7. a) Explain various on the job and off the job training methods in detail. (5)  
b) Distinguish between training and development. (2.5)

**UNIT IV**

- Q8. a) What is performance appraisal? Explain the methods of performance appraisal in detail. (5)  
b) List out the components of compensation. (2.5)  
or  
Q9. a) Discuss the concept and types of incentive payments. (5)  
b) Explain the types of compensation. (2.5)

## CENTRAL UNIVERSITY OF HARYANA

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<b>Programme</b> :	<b>B. Voc. Retail and Logistics Management (RLM)</b>
<b>Semester</b> :	<b>VI (Regular)</b>
<b>Paper Name</b> :	<b>Entrepreneurship Development</b>
<b>Paper Code</b> :	<b>RLM-601</b>
<b>Max Marks</b> :	<b>37.5</b>
<b>Max Time</b> :	<b>3 hours</b>
<b>Batch</b> :	<b>July 2020</b>

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**Question No.1 is compulsory. Attempt one question from each unit.**

**Q.1 Attempt any five questions** (1.5\*5=7.5)

- A. What is 'Window of Opportunity'?
- B. What is marketing plan under business plan?
- C. Differentiate between an entrepreneur and a manager.
- D. What is MSME?
- E. Define the term 'Opportunity' under business plan.
- F. What is SSI?
- G. Why do companies hire professionals for jobs?
- H. What are the managerial functions of an entrepreneur?

### UNIT-I

**Q.2 (A) Define Entrepreneurship. What are the characteristics of a successful entrepreneur?** (5)

**(B) Differentiate between entrepreneur and intrapreneur.** (2.5)

**Or**

**Q3. (A) What are the internal and external factors that drive a person for entrepreneurship?** (5)

**(B) Explain the role of entrepreneurship in economic development.** (2.5)

### UNIT-II

**Q.4 (A) Define business idea. What are the methods of generating successful business idea?** (5)

**(B) How one can identify opportunities for business?** (2.5)

**Or**

**Q.5 (A) Explain feasibility analysis and its types.** (5)

**(B) How to screen projects with SWOT analysis?** (2.5)

### UNIT-III

- Q.6** (A) What is a business plan? Explain each component in detail. (5)  
(B) Is it necessary to have a business plan for starting a new venture? (2.5)
- Or**
- Q.7** (A) Make a business plan for operating a retail store in a rural area. (5)  
(B) What is the purpose of making a business plan? (2.5)

### UNIT-IV

- Q.8** (A) Explain women's role in entrepreneurship. (5)  
(B) What are the key differences between family and non-family entrepreneurs? (2.5)
- Or**
- Q.9** (A) Which are the institutions providing institutional support to entrepreneurs? (5)  
(B) What are the current government schemes that help entrepreneurs to start their own businesses? (2.5)

# CENTRAL UNIVERSITY OF HARYANA

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<b>Programme</b>	:	<b>B. Voc. Retail and Logistics Management (RLM)</b>
<b>Semester</b>	:	<b>IV (Regular)</b>
<b>Paper Name</b>	:	<b>COST ACCOUNTING</b>
<b>Paper Code</b>	:	<b>RLM-402</b>
<b>Max Marks</b>	:	<b>37.5</b>
<b>Max Time</b>	:	<b>3 hours</b>
<b>Batch</b>	:	<b>2020</b>

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**Question No.1 is compulsory. Attempt one question from each unit.**

**Q1. Attempt any five questions:**

(5x1.5=7.5)

- The budgeted overhead is Rs. 3,00,000 and the budgeted direct labour cost is Rs. 10,00,000.  
Calculate overhead on the basis of percentage of direct labour cost method.
- What do you mean by controllable cost?
- Define the term material control.
- List down the various objectives of cost unit.
- What is process cost?
- Name the methods of labour turnover.
- Define job costing.
- Define idle time.

## UNIT I

- Q2. a) What is cost? Discuss its various components and elements. (5)  
b) What are the various objectives of cost accounting? (2.5)
- or
- Q3. a) Explain the advantage of effective material control system. (5)  
b) List out the limitations of standard costing. (2.5)

## UNIT II

- Q4. a) State the source of overhead expenses for costing. (5)  
b) Discuss advantage and disadvantage of percentage of direct labour cost method. (2.5)
- or
- Q5. a) What is overtime? What are the various causes and treatment of overtime in cost accounting? (5)  
b) Critically evaluate the need of absorption of overhead in cost accounting. (2.5)

### UNIT III

- Q6. a) What do you mean by cost ascertainment? Why it is essential? (5)  
b) Discuss how cost unit plays important role while preparing cost accounts. (2.5)
- or
- Q7. a) What is cost unit? Write down its various characteristics and objectives. (5)  
b) What is cost centre? (2.5)

### UNIT IV

- Q8. a) Define budgetary control. Explain the pre requisites for the successful implementation of budgetary control system. (5)  
b) Discuss the role of budget officer. (2.5)
- or
- Q9. a) What is zero based budgeting? Mention the advantage of it. (5)  
b) Discuss the role of planning in budgeting process. (2.5)

# CENTRAL UNIVERSITY OF HARYANA

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<b>Programme</b>	:	<b>B. Voc. Retail and Logistics Management (RLM)</b>
<b>Semester</b>	:	<b>IV (Regular)</b>
<b>Paper Name</b>	:	<b>CONSUMER BEHAVIOUR</b>
<b>Paper Code</b>	:	<b>RLM-401</b>
<b>Max Marks</b>	:	<b>37.5</b>
<b>Max Time</b>	:	<b>3 hours</b>
<b>Batch</b>	:	<b>2020</b>

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**Question No.1 is compulsory. Attempt one question from each unit.**

**Q1. Attempt any five questions:** (5x1.5=7.5)

- What are reference groups?
- Who are opinion leaders?
- Define culture.
- Discuss the influence of reference group on consumer buying decision process.
- What do you mean by lifestyle?
- What are the personal motives behind purchasing product?
- "Culture is invented". Explain.
- What are the various types and sources of information?

## UNIT I

Q2. a) Define consumer behaviour. What is the role of consumer behaviour in marketing strategy? (5)

b) What do you understand by ultimate consumer? (2.5)

or

Q3) a) Discuss how external environment factors influence consumer behaviour? (5)

b) What is family? Discuss its types. (2.5)

## UNIT II

Q4. a) How can the study of consumer behaviour assist marketers in segmenting markets and positioning products? (5)

b) Explain how attitude, values and beliefs are interrelated? (2.5)

or

Q5. a) Define segmentation. Discuss various dimensions of psychographic segmentation. (5)

b) Discuss how learning influence consumer behaviour? (2.5)

## UNIT III

Q6. a) Critically examine the role of consumer motivation in their decision making. (5)

b) Briefly explain various functions of attitude. (2.5)

or

Q7. a) Elaborate the nature of personality. Discuss various determinants of personality which influence consumer buying decision. (5)

b) Briefly explain the characteristics of learning. (2.5)

#### UNIT IV

Q8. a) Discuss different models of consumer buying behaviour. (5)

b) List out and explain the essential steps involved in post purchase evaluation. (2.5)

or

Q9. a) Discuss effect of culture on consumer decision making. How can marketers deal with these influences in consumer behaviour? (5)

b) Discuss the role of satisfaction in post purchase evaluation. (2.5)