

Registration No :

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Total Number of Pages : 01

B.Pharm
BP101T

**1st Semester Regular / Back Examination 2018-19
HUMAN ANATOMY AND PHYSIOLOGY I**

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 75

Q.CODE : E907

Answer Question No.1 (Part-A) and 02 (Part-B) which are compulsory and any two from Part-C.

The figures in the right hand margin indicate marks.

Part- A

Q1 Objective Answer Type Questions (Answer All) (2 x 10)

- a) Outline levels of structural organization and body systems.
- b) Define anatomy and physiology.
- c) Differentiate anterior and posterior.
- d) What is hemostasis.
- e) Classify bones.
- f) How many vertebrae present in the lumbar vertebral region?
- g) What is anaemia.
- h) Which blood vessel carries blood from heart to lungs?
- i) What is lymph?
- j) What do you mean by sagittal plane of body?

Part- B

Q2 Focused-Short Answer Type Questions- (Answer Any Seven) (5 x 7)

- a) Discuss blood grouping.
- b) Elaborately Classify tissue system of body.
- c) Outline different steps of erythropoiesis.
- d) Draw structure of a typical cell with proper labeling.
- e) Make a brief note on ear.
- f) Briefly discuss on the origin and functions of spinal nerves.
- g) What is a skeleton, what are various functions of it?
- h) What are different functions of lymph.
- i) Make a brief note on physiology of muscle contraction.

Part-C

Q3 Long Answer Type Questions (Answer Any Two) (10)
Discuss in detail on composition and functions of blood.

Q4 Write a note on the structure of heart with help of a neat and labeled diagram. **(10)**

Q5 Write structure and function of lymph node? **(10)**

Q6 Describe structure and functions of different types of epithelial tissue. **(10)**

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B.Pharm
BP102T1st Semester Regular / Back Examination 2018-19

PHARMACEUTICAL ANALYSIS I

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 75

Q.CODE : E952

Answer Question No.1 (Part-A) and 02 (Part-B) which are compulsory and any TWO from Part-C.

The figures in the right hand margin indicate marks.

Part- A

Q1 Objective Answer Type Questions (Answer All)

(2 x 10)

- Define pharmaceutical analysis and give its scope.
- Define pharmacopoeia. What are different types of pharmacopoeias?
- What is universal indicator? Write its components.
- Give pharmaceutical applications of non-aqueous titrations.
- What is a buffer solution? Give two examples of it.
- Name the indicators used in Fajan's method for titration of halides against silver nitrate.
- What do you mean by Primary and secondary standards in chemical analysis.
- What do you understand by Co-precipitation?
- Write about advantages and disadvantages of diazotization reaction.
- What do you understand by standard hydrogen electrode?

Part- B

Q2 Focused-Short Answer Type Questions- (Answer Any Seven)

(5 x 7)

- Classify errors in pharmaceutical analysis.
- How you will prepare and standardize 0.5 M Sulphuric acid?
- Define limit test. Write in brief about limit test for Sulphate.
- Discuss in brief about Oswald's theory of acid-base indicators.
- Explain the assay procedure of Ephedrine Hydrochloride.
- Differentiate between Mohr's method and Volhard's method.
- State different types of EDTA titration with suitable examples.
- What is gravimetric analysis? Discuss in details about principle involved in it.
- Write the principle and applications of 'Polarography'.

Part-C

Long Answer Type Questions (Answer Any Two)

Q3 Discuss in brief about different techniques involved in pharmaceutical analysis.

(10)

Q4 Explain non-aqueous titration. Discuss about various types of solvents and indicators used in non-aqueous titrations.

(10)

Q5 What are various types of conductivity cells? Why is the platinization of electrodes done?

(10)

Q6 Write in brief about basic principle, theory, types and applications of diazotization titration.

(10)

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**B.Pharm
BP103T**

**1st Semester Regular/Back Examination 2018-19
PHARMACEUTICS - I
BRANCH : B.Pharma
Time : 3 Hours
Max Marks : 75
Q CODE : E988**

Answer Question No.1(Part-A) and 02 (Part-B) which are compulsory and ANY TWO from Part-C.

The figures in the right hand margin indicate marks.

Part- A

Q1 Objective Answer Type Questions (Answer All) (2×10)

- a) Define a prescription.
- b) What do you mean by a dosage form?
- c) What is the definition of elixirs?
- d) What are the roles of glidants and lubricants?
- e) What do you mean by mouth feel effect?
- f) What are pastilles?
- g) What are uses of poultice?
- h) What do you mean by ud?
- i) What is posology?
- j) What is Young's formula?

Part- B

Q2 Focused-Short Answer Type Questions- (Answer Any SEVEN) (5×7)

- a) What are the common errors in a prescription?
- b) Briefly describe in steps about the development of Indian Pharmacopoeia.
- c) Briefly discuss the various types of physical incompatibilities with examples.
- d) How will you dispense the following powders?
 - i) Powders containing volatile substances
 - ii) Powders containing potent drugs
- e) Write importance of refill instruction and endorsement of prescriptions.
- f) Discuss tests for identification of emulsions.
- g) Explain the different methods for the preparation of ointments.
- h) Classify different types of mixtures.
- i) Inscription and subscription are synonymous - discuss.

Part-C

Long Answer Type Questions (Answer Any TWO)

- Q3** Describe the Soxhlet apparatus and the process of extraction taking place in it. **(10)**
- Q4** Define aromatic waters. Explain the different methods for preparing aromatic waters. **(10)**
- Q5** What is geometric dilution. Explain with suitable example. **(10)**
- Q6** Explain the term tolerated and adjusted incompatibilities. **(10)**

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**B.Pharm
BP104T**

1st Semester Regular / Back Examination 2018-19

PHARMACEUTICAL INORGANIC CHEMISTRY

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 75

Q.CODE : E1000

Answer Question No.1 (Part-A) and 02 (Part-B) which are compulsory and any TWO from Part-C.

The figures in the right hand margin indicate marks.

Part- A

Q1 Objective Answer Type Questions (Answer All) (2 x 10)

- a) Write down the principle of Limit test for chloride.
- b) Define astringent and give example of two inorganic astringent.
- c) Define buffer capacity and isotonic solution.
- d) Write down the synonym and uses of chlorinated lime.
- e) Define dentifrices and anticaries agent and give one example each.
- f) Define expectorants and give two examples.
- g) What is half life of a radioactive material? Give its significance.
- h) What is I.P., when the 1st I.P. was published?
- i) Define Emetics. Write down the chemical formula of blue vitriol.
- j) Combination antacid preparation is better than single antacid preparation-justify it.

Part- B

Q2 Focused-Short Answer Type Questions- (Answer Any Seven) (5 x 7)

- a) Define buffers. Write down the applications of buffers.
- b) Define cathartics. Classify it and mention the monograph of MgSo₄.
- c) Write down notes on antidotes.
- d) Write down notes on ORS.
- e) Write the principle of limit test for Iron.
- f) Write down notes on Iodine and its preparation.
- g) Define haematinics. Write down the monograph of Ferrous Sulphate.
- h) Write down the properties of α, β, γ radiations.
- i) Describe the role of fluorides in dental care.

Part-C

Long Answer Type Questions (Answer Any Two)

- Q3** Give a detail note on the construction and working of G-M counter. Discuss various applications of radio pharmaceuticals. **(10)**
- Q4** Define and classify antacids with examples. Mention the ideal characteristics of antacids. Write down the monograph of any two inorganic antacids. **(10)**
- Q5** Write down the mechanism of action of antimicrobial agents. Write down the monograph of Hydrogen peroxide and Boric acid. **(10)**
- Q6** Describe in detail about the limit test for Arsenic with a neat labeled diagram. **(10)**

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According to PCI Syllabus

B.Pharm
BP105T

First Semester Regular Examination 2018-19

(Non University Examination as per Pharmacy Council of India (PCI) Guideline 2018-19)

SUB: COMMUNICATION SKILLS

BRANCH: B.PHARM

Time: 1½ Hours

Max Marks: 35

QUESTION CODE: NUE1901

Answer any one from the Part-A and any five from the Part-B.

The figures in the right hand margin indicate marks.

Part-A

Q.1. Write a paragraph in about 150 words on "Communication in the age of globalization". (10)

Q.2. Write the "importance of communication through English at present time". (10)

Part-B (Write in about 75 words)

Q.3. How is the audience important while making a presentation? (05)

Q.4. Show the difference between formal and informal style. (05)

Q.5. What is communication? Discuss some of the barriers to effective communication. (05)

Q.6. Write a short paragraph on "How to send an e mail"? (05)

Q.7. Show the difference between the long and the short vowel sounds in English Pronunciation. (05)

Q.8. Write the "Do's & Don'ts" of group discussion. (05)

Q.9. Discuss the relation between Tense & Time. (05)

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According to PCI Syllabus

B.Pharm
BP106RBT

First Semester Regular Examination 2018-19
(Non University Examination as per Pharmacy Council of India (PCI) Guideline 2017-18)

SUB: REMEDIAL BIOLOGY

BRANCH: B.PHARM

Time: 1½ Hours

Max Marks: 35

QUESTION CODE: NUE1902

Answer any one from the Part-A and any five from the Part-B.

The figures in the right hand margin indicate marks.

Part-A

- Q.1. Draw and label a diagram of human G.I tract, describe the production and functions of Hydrochloric acid in stomach. (10)
- Q.2. Diagrammatically show the different parts of Nephron, write a notes on production of urine. (10)

Part-B Write short note:

- Q.3. Rules for Binomial nomenclature (05)
- Q.4. Composition and functions of saliva (05)
- Q.5. Modified underground stem (05)
- Q.6. Anatomically difference between Dicot stem and Dicot root (05)
- Q.7. Anaerobic respiration (05)
- Q.8. Significance of mitosis (05)
- Q.9. Functions of kidney (05)

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According to PCI Syllabus

B.Pharm
BP106RMT

First Semester Regular Examination 2018-19

(Non University Examination as per Pharmacy Council of India (PCI) Guideline 2017-18)

SUB: REMEDIAL MATHEMATICS

BRANCH: B.PHARM

Time: 1½ Hours

Max Marks: 35

QUESTION CODE: NUE1903

Answer any one from the Part-A and any five from the Part-B.

The figures in the right hand margin indicate marks.

Part-A

Q.1. Differentiate $(\sin x)^x + x^{\sin x}$ w. r. t. x (10)

Q.2. Find the solution of the differential equation $x \frac{dy}{dx} + \frac{y^2}{x} = y$. (10)

Part-B

Q.3. What is the value of $\lim_{x \rightarrow 3} \frac{x-3}{\sqrt[3]{x}-\sqrt[3]{3}}$ (05)

Q.4. Find the derivative of $\sin^3(\sqrt{x})$. (05)

Q.5. Evaluate $\int \frac{2x+1}{x^2-3x+2} dx$. (05)

Q.6. Solve: $(xy - x)dx + (xy + y) dy = 0$. (05)

Q.7. Find the Laplace transform of e^{kt} . (05)

Q.8. Solve for x and y $\begin{bmatrix} 3 & -4 \\ 9 & 2 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 10 \\ 2 \end{bmatrix}$. (05)

Q.9. Find the cofactors of 6, 2, 8, 5 and 7 in $\begin{vmatrix} 3 & -4 & 6 \\ 2 & 5 & 7 \\ 9 & 8 & 0 \end{vmatrix}$. (05)

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B.Pharm 15PH101

1st Semester Back Examination 2018-19
PHARMACEUTICS - I
BRANCH : B.Pharma
Time : 3 Hours
Max Marks : 100
Q.CODE : E986

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Short Answer Type Questions (Answer All-10) (2 x 10)

- a) Define dosage form
b) What do you mean by posology
c) Define Suspension
d) Define Suppositories
e) What do you mean by effervescent powder
f) Define prescription.
g) What do you mean by aromatic water
h) Define emulsion
i) What do you mean by incompatibilities
j) What is nasal drops

Part- II

Q2 Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- a) How would you prepare mouth gargle and mouth wash
b) What do you mean by lotion and liniment ,give formula
c) Discuss importance of Indian Pharmacoeopia
d) Write Pharmaceutical oath
e) Discuss different types of dosage forms
f) Discuss career in Pharmacy
g) Write ten latinterms used in prescription
h) How would you dispense medicines
i) What do you man by community and linal pharmacy
j) Write about Chopra Drug Enquiry Committee 1930
k) Discuss different types of powders
l) How would you prepare suppositories

Part-III

Q3 Long Answer Type Questions (Answer Any Two out of Four) Write history of pharmacy in India (16)

Q4 Describe a formula and method of preparation of cream (16)

Q5 Discuss different types of emulsion ,and how to prepare emulsion (16)

Q6 Describe method for preparation of suspension (16)

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B.Pharm
15PH1021st Semester Back Examination 2018-19

INORGANIC PHARM CHEMISTRY

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 100

Q.CODE : E998

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Short Answer Type Questions (Answer All-10) (2 x 10)

- What is Epsom salt? Mention its uses.
- What is blue vitriol? Give its uses.
- Define buffer capacity and composition of buffer solution.
- What is barium meal? Give its uses.
- Write down the principle of Limit test for Chloride.
- Define astringent and give example of two inorganic astringent.
- What is the role of lead acetate cotton in the limit test for arsenic?
- What is I.P., when the 1st I.P. was published?
- What is Lugol's solution? Mention its use.
- What are dentifrices? Give two examples of dentifrices.

Part- II

Q2 Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- Name the electrolytes used in replacement therapy and Write down notes on ORS.
- Define cathartics. Classify it and mention the monograph of MgSO₄.
- Write down notes on antidotes.
- Define buffers. Write down the applications of buffers.
- Write down the function of major physiological ions.
- Write down notes on Iodine and its preparation.
- Define haematinics. Write down the monograph of Ferrous sulphate.
- Write down the limit test for Iron.
- Write down the role of fluorides in dental care.
- Write down different theories of acid and base with examples.
- Write notes on pharmaceutical aids used in pharmaceutical industry.
- Write down the hazards of radio pharmaceuticals and precaution for its.

Part-III

Q3 Long Answer Type Questions (Answer Any Two out of Four) (16)

Define Antacid, classify it with suitable examples. Write down the ideal characteristics of antacid and mention the monograph of any two inorganic antacid.

Q4 Write down the properties of α , β and γ rays. Give a detail note on the construction and working of G-M counter. Discuss various applications of radio pharmaceuticals. (16)

Q5 Write down the mechanism action of antimicrobial agents. Write down the monograph of Hydrogen peroxide and Chlorinated lime. (16)

Q6 Write down various effects of impurities. Describe in detail, the limit test for arsenic with a neat leveled diagram. (16)

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B.Pharm
15PH103

1st Semester Back Examination 2018-19

HAP - I

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 100

Q.CODE : E906

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Short Answer Type Questions (Answer All-10) (2 x 10)

- a) Define anatomy and physiology
- b) Define cell and tissue
- c) What do you mean by gross anatomy?
- d) Which organelle of cell is termed as power house of the cell?
- e) What is normal haemoglobin content of a healthy male?
- f) What do you mean by haemopoiesis?
- g) What is the basic difference between lymph and plasma
- h) Mention the anatomical position of spleen.
- i) What is myocardial infarction?
- j) Define anatomical position of body.

Part- II

Q2 Focused-Short Answer Type Questions (Answer Any Eight out of Twelve) (6 x 8)

- a) Discuss on grouping of blood.
- b) Write a note on thoracic cage.
- c) Discuss on various types of movements of synovial joint.
- d) Make a note on the formation and circulation of lymph.
- e) What do you mean by cardiac cycle, discuss in detail.
- f) Discuss in detail about the functions of skeleton.
- g) Write the structure and function of lymph node.
- h) Make an outline of mechanism of blood coagulation
- i) Describe cell structure with help of a neat and labeled diagram.
- j) Discuss in brief on hypertension.
- k) Classify different types of joints of body with proper example and description
- l) Write anatomy and physiology of thymus gland

Part-III

Q3 Long Answer Type Questions (Answer Any Two out of Four) (16)
Write composition and functions of blood.

Q4 Write anatomy of skeletal muscle and physiology of muscle contraction. **(16)**

Q5 Write structure and function of heart. **(16)**

Q6 Discuss on the elementary tissues of the human body **(16)**

Registration No :

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Total Number of Pages : 02

B.Pharm
15PH104

**1st Semester Back Examination 2018-19
COMMUNICATIVE ENGLISH**

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 100

Q.CODE : E1007

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Short Answer Type Questions (Answer All-10) (2 x 10)

- a) She said, "I'll be using the car next Friday." [report the statement]
- b) You are waiting for your friend. [change into passive]
- c) If you stopped talking, I _____ get some work done [can, would, might]
- d) Write two words to indicate consonant cluster
- e) Diaper, Fries [provide the British alternatives of the given words]
- f) Would you like tea? or coffee? [indicate the correct intonation]
- g) Write two words that carry a diphthong sound
- h) She's lived there _____ seven years. (use suitable preposition to fill the blank)
- i) He loved to read every night before sleeping." [state the type of verb used]
- j) He got top grade in the math test. (Add a question tag)

Part- II

Q2 Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- a) Dark cloud certainly doesn't predict Heavy rain [explain the change in meaning due to stress shift]
- b) Call for, look out, Fall in, Give up, Run into, Wear off [use in sentences to explain the meaning]
- c) Compare and contrast between filters and barriers
- d) Explain, photographer, reasonable [make syllable division and identify the primary stress]
- e) Why information overload is is considered as a bottleneck to effective communication?
- f) What is concord? Explain with example
- g) age, soup, hurt, examination, top, zoo, [make phonemic transcription of the given words]
- h) Briefly sketch the procedures of audience analysis.
- i) Define Aspect and state its relationship with Tense and time.
- j) How do you differentiate between the 2nd and 3rd conditionals
- k) State the context when falling tone is used instead of rising tone.
- l) Differentiate between sign language and paralanguage

Part-III

Long Answer Type Questions (Answer Any Two out of Four)

Q3 Verbal communications often lead to be ineffective in absence of nonverbal components. Justify the statement with your argument on the importance of Nonverbal communication (16)

257 257 257 257 257 257 257 257

Q4 What are the stages of communication process? Explain other connected factors that influence communication. (16)

Q5 Make a comparative study of communication through vernacular and through English as a second language and state why communication in English is important now a day? (16)

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Q6 **Instruction: Read the passage below and correct the errors in the passage.** (16)

My stepmother is the 1) jenealogist of the family. She maintains records of births, deaths, marriages, and divorces. She takes the job 2) real serious. She sends missives to the family 3) whoever something noteworthy occurs. We recently had a bulletin about 4) the demise of the relative during the Civil War– which transpired a century-and-a-half ago. This ancestor apparently bequeathed his old earthly possessions (some 5) beautiful and antique furniture) to his progeny, who in turn bequeathed their goods to their descendants. My husband’s great-grandfather, 6) his mother’s father, has recently inherited some of this 7) beautiful antique furniture. My husband wonders if he will one day pass heirlooms on to his progeny. 8) If yes, we may inherit some new furniture, and my stepmother will have even more to keep track of!

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- a) A. genealogist
C. genealegist
 - b) A. very serious.
C. really serious.
E. Correct as is
 - c) A. whether
C. whatever
E. Both A and B are correct
 - d) A. a demise of the relative
C. a relative’s demise
E. Both A and B are correct
 - e) A. beautiful, but antique
C. beautiful or antique
 - f) A. his mother’s father’s father,
C. the mother of his father’s father,
 - g) A. pedestrian
C. deleterious
E. exquisite
 - h) A. If so,
C. This way,
E. Correct as is
- B. jeneologist
D. Correct as is
 - B. real seriously.
D. very seriously.
 - B. whenever
D. Both A and C are correct
 - B. the demise of a relative
D. Both B and C are correct
 - B. beautiful antique
D. Correct as is
 - B. the father of his father’s father,
D. Both A and B could be correct
 - B. dynamic
D. antiquated
 - B. If not,
D. If true,

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B.Pharm
15PH105

3rd Semester Back Examination 2018-19

REMEDIAL BIOLOGY

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 100

Q.CODE : E1015

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Short Answer Type Questions (Answer All-10) (2 x 10)

- a) What are living organisms?
- b) Difference between plant and animal cell.
- c) What are the functions of phloem?
- d) Name the disease caused by Plasmodium and Taenia.
- e) Write function of chloroplast.
- f) Write function of mitochondria.
- g) Why lysosomes is called as suicidal bags?
- h) Write about *Fasciola*.
- i) Define the term venation.
- j) Difference between dicot and monocot plant.

Part- II

Q2 Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- a) Write short notes on modification of stems.
- b) Add notes on *Entamoeba*.
- c) Distinguish between xylem and phloem.
- d) What are the functions of mitochondria?
- e) Write biological significance of carbohydrate and vitamins.
- f) Add notes on the lifecycle of mites.
- g) Write notes on pharmaceutical importance of papaveraceae families.
- h) Explain classification of plant kingdom.
- i) Write short notes on Tissue.
- j) Distinguish between mitosis and meiosis.
- k) Discuss about the asexual life cycle of *Plasmodium*.
- l) Write biological significance of plant hormones.

Part-III

Long Answer Type Questions (Answer Any Two out of Four)

Q3 Explain in detail about the T.S. of monocot and dicot root with help of diagrams. (16)

Q4 What is cell division? Explain Meiosis in detail with illustration. (16)

Q5 Write structure and life history of Amoeba (16)

Q6 Describe general structure and life history of silk worm. (16)

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Total Number of Pages : 02

**B.Pharm
15PH106**

1st Semester Back Examination 2018-19

REMEDIAL MATHEMATICS

BRANCH : B.Pharma

Time : 3 Hours

Max Marks : 100

Q.CODE : E1016

Answer Question No.1 (Part-1) which is compulsory, any EIGHT from Part-II and any TWO from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Short Answer Type Questions (Answer All-10) (2 x 10)

- a) Divide 57 into two parts whose product is 782.
- b) What is singular matrix?
- c) Define mode with one example.
- d) Find the value of $\sin 210^\circ$ and $\cos 315^\circ$
- e) Find the distance between the points: P(-3,7) and Q(-1,9)
- f) Find the slope of a line which passes through points (3, 2) and (-1, 5).
- g) Evaluate: $\lim_{x \rightarrow 0} (3x^2 + 4x + 6)$
- h) Calculate the derivative of $f(x) = 4 - x^2$
- i) Evaluate: $\int (3x + 4)^2 dx$
- j) What is definite integral?

Part- II

Q2 (Answer Any Eight out of Twelve) (6 x 8)

- a) Solve: $8x^4 - 28x^2 + 20 = 0$
- b) Prove that: $\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ a^2 & b^2 & c^2 \end{vmatrix} = (a - b)(b - c)(c - a)$
- c) Solve the system of equations: $2x + y = 4$, $x + 3y = 7$
- d) Determine the median for the following frequency distribution:

x:	10	20	30	40	50	60	70
f:	18	22	30	38	28	15	13

- e) Prove that: $(1 + \cot A - \operatorname{cosec} A)(1 + \tan A + \sec A) = 2$
- f) Find the value of $\sin 18^\circ$
- g) Prove that the points A (1,-2), B (3, 6), C (5, 10) and D (3, 2) are the vertices of a parallelogram.
- h) The four vertices of a quadrilateral are (1, 2), (6, 5), (5, 3) and (3, 4), find the area of this quadrilateral.
- i) Find the angle in between the lines $x - y\sqrt{3} - 5 = 0$ and $\sqrt{3}x + y - 7 = 0$.
- j) Evaluate: $\lim_{x \rightarrow 0} \left(\frac{3^x - 2^x}{\tan x} \right)$
- k) Find $\frac{dy}{dx}$ if $x^2 + y^2 = \log(xy)$
- l) Solve: $\int e^x \cos x dx$

Part-III

Long Answer Type Questions (Answer Any Two out of Four)

Q3 Find $adj A$ and A^{-1} , Where $A = \begin{bmatrix} 1 & 0 & -1 \\ 3 & 4 & 5 \\ 0 & -6 & -7 \end{bmatrix}$, Also verify $A(adj A) = (adj A)A$ (16)

Q4 Find the mean, median and mode from the following data : (16)

Wages (in Rs.)	20-30	30-40	40-50	50-60	60-70
No. of labourers	4	5	20	10	4

Q5 What is the slope point and two point form of a line? Find the equations of the medians of a triangle ABC, the co-ordinates of whose vertices are A (-1, 6), B (-3,-9) and C (5,-8). (16)

Q6 What is partial fraction and Evaluate: $\int \frac{(-2x+4)}{(x^2+1)(x-1)^2} dx$ (16)