

00810

11920

3 Hours / 80 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Answer any EIGHT of the following :

16

- (a) Define Health.
- (b) Name the deficiency disease caused by following nutrient :
 - (i) Vit. C
 - (ii) Iron
 - (iii) Vit. B₁₂
 - (iv) Calcium
- (c) Write one advantage and one disadvantage of terminal method of family planning.
- (d) Write scope of first aid.
- (e) Write causes of air pollution.

- (f) Define Microbiology.
- (g) Give the long forms of following abbreviations :
 - (i) AIDS
 - (ii) BMI
 - (iii) DT
 - (iv) OPV
- (h) Define Stroke.
- (i) Differentiate between Natural immunity and Artificial immunity.
- (j) Classify Protozoa.
- (k) Draw well labelled diagram of virus.
- (l) Name any one disease transmitted by following :
 - (i) Mosquito
 - (ii) Rat

2. Answer any FOUR of the following :

4 × 3 = 12

- (a) Explain levels of prevention of disease.
- (b) Write source, functions and deficiency diseases of Iodine.
- (c) Define the term Demography. Explain demographic cycle.
- (d) What are burns ? Write symptoms and first aid for burns.
- (e) Name any two water borne diseases. Write about slow sand filter.
- (f) Classify bacteria according to their shape.

3. Answer any FOUR of the following :**4 × 3 = 12**

- (a) Give causes, prevention and control of blindness.
- (b) Define Nosocomial infection. Write prevention and control of Nosocomial infection.
- (c) What is a disease agent ? Classify them with examples.
- (d) Give source and functions of Vit.-D.
- (e) What are Intrauterine devices ? Classify them.
- (f) Write a note on Cold Chain Storage of Vaccines.

4. Answer any FOUR of the following :**4 × 3 = 12**

- (a) Define Noise. What are ill effects of noise pollution ?
- (b) Write note on gram staining method.
- (c) Write about types and risk factors of Diabetes Mellitus.
- (d) Give disinfection procedure for following :
 - (i) Sputum
 - (ii) Room
- (e) Enumerate determinants of health. Explain any one.
- (f) Name nutrient causing following diseases :
 - (i) Colour blindness
 - (ii) Blood Clotting disorder
 - (iii) Wilson's disease

5. Answer any FOUR of the following :

4 × 3 = 12

- (a) Give advantages and disadvantages of condom.
- (b) What is Angina pectoris ? What are the risk factors for it ?
- (c) What are health hazards due to improper solid waste disposal ? Define sewage.
- (d) Write note on fungal infection.
- (e) Write symptoms and prevention of Hypertension.
- (f) Write note on National Immunization Schedule.

6. Write Causative agent, mode of transmission and symptoms of following :

(Any FOUR)

4 × 4 = 16

- (a) Leprosy
 - (b) Hepatitis-A
 - (c) Rabies
 - (d) Filariasis
 - (e) Hookworm infection
 - (f) Chickenpox
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Marks

1. **Attempt any EIGHT of the following:** **16**
- a) Define the terms biochemistry and biomolecules.
 - b) Define enzyme inhibition? Give its types.
 - c) Give physiological role of sodium in body.
 - d) Define the terms Thrombocytopenia and Lymphocytosis.
 - e) Draw structures of Fructose and Mannose.
 - f) Write tests for detection of glucose in Urine.
 - g) Define essential fatty acids? Draw structure of any one.
 - h) Define ketonemia. How it occurs?
 - i) Name deficiency disorder of Niacin and give its signs and symptoms.

P.T.O.

- j) Define Isoelectric point of amino acids.
- k) Define Holoenzymes and Multienzymes.
- l) Draw a well labelled diagram of a typical animal cell.

2. Attempt any FOUR of the following: 12

- a) Define and classify carbohydrates with example of each class.
- b) Draw structure of cholesterol and give its colour reactions.
- c) Describe acid base properties of amino acids.
- d) Explain Koshland theory of enzyme action.
- e) Write functions of blood and briefly describe its composition.
- f) Enlist abnormal constituents of urine and give their significance.

3. Attempt any FOUR of the following: 12

- a) Define and classify minerals with examples.
- b) Explain water balance of normal individual.
- c) Describe role of vitamin A in vision cycle.
- d) Briefly describe denaturation of proteins.
- e) Enlist factors affecting rate of enzyme catalysed reaction and explain effect of substrate concentration on the rate.
- f) Give structure, physiological functions and deficiency disorders of Thiamine.

4. Attempt any FOUR of the following: 12

- a) Define and classify proteins with examples.
- b) Describe Mucosal block theory of iron absorption.
- c) Explain the terms Acid value and Iodine number of Lipids with their significance.
- d) Write Barfoed's test and give its significance and principle.
- e) Briefly describe diagnostic applications of enzymes.
- f) Define Mutarotation. Explain how it occurs.

5. Attempt any FOUR of the following:**12**

- a) Define and classify enzymes.
- b) Describe secondary structure of proteins.
- c) Write biological role of calcium and give its deficiency disorders.
- d) Explain structure of starch.
- e) What is anemia? Give its types and explain Megaloblastic anemia.
- f) Name protein deficiency disorders? Explain any two.

6. Attempt any FOUR of the following:**16**

- a) Define lipids and give classification of lipids.
 - b) Explain β -oxidation of unsaturated fatty acids.
 - c) Draw shapes of various osazones of carbohydrates and write reaction involved in osazone formation of Glucose.
 - d) Describe the steps involved in Glycolysis and give its energetics.
 - e) Describe biological role and deficiency disorder of Riboflavin and Folic acid.
 - f) Explain "oxidative deamination". And transamination of amino acids.
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Marks

1. Attempt any EIGHT of the following: 16
- Define Anatomy and Physiology.
 - Name fundamental tissues of the body.
 - What is serum?
 - Explain true and false ribs.
 - Name the bones of Shoulder Joint.
 - Define the term Dyspnea.
 - Define cell. Enlist its components.
 - Define Erythropoiesis.
 - Give the names of four Cranial Nerves.
 - Explain the terms fossa and foramen.
 - Define Saliva? Enlist salivary glands.
 - Name the hormones secreted by Adrenal glands.

P.T.O.

- 2. Attempt any FOUR of the following:** **12**
- a) Define Reflex Action. Explain structure of Reflex Arc.
 - b) Enlist the hormones secreted by posterior pituitary gland and explain their effects.
 - c) Draw and label L.S. of kidney
 - d) Define lymph? Give functions of lymphatic system.
 - e) Explain the terms Atherosclerosis and Myocardial Infarction.
 - f) What will be the effect of sympathetic stimulation on –
 - (i) Salivary gland
 - (ii) Blood vessels
 - (iii) Bronchi
- 3. Attempt any FOUR of the following:** **12**
- a) Draw well labelled diagram of Internal Ear.
 - b) Explain the term Hypothalamus with its functions.
 - c) Define the term portal circulation? Give its significance.
 - d) Explain physiology of muscle contraction.
 - e) Describe composition and function of Gastric Juice.
 - f) Explain role of kidney in maintenance of water balance of body.
- 4. Attempt any FOUR of the following:** **12**
- a) Explain the term anemia? Enlist its types and explain megaloblastic anemia.
 - b) Name the cartilages of larynx? Give functions of larynx.
 - c) Classify Epithelial Tissue.
 - d) Explain the terms Thrombosis and embolism.
 - e) Explain properties of skeletal muscle tissue.
 - f) Describe the mechanism of coagulation of blood.

5. Attempt any FOUR of the following:**12**

- a) Define Glomerular filtration and Glomerular filtration rate.
- b) Explain Physiology of Respiration.
- c) Explain the terms Oedema and Nephritis.
- d) Define and give normal values of
 - (i) Vital Capacity
 - (ii) Tidal Volume
 - (iii) Residual volume
- e) Compare Autonomic Nervous System (ANS) with Central Nervous System (CNS).
- f) State various types of Synovial Joints with examples.

6. Attempt any FOUR of the following:**16**

- a) Explain the structure and function of Ovaries.
 - b) Draw diagram of conducting system of heart. Explain cardiac cycle.
 - c) Draw V. S. of skin. Explain role of skin in maintenance of body temperature.
 - d) Explain the term menstruation. Describe in detail the phases of Menstrual Cycle.
 - e) Give the composition of bile and its functions.
 - f) Describe :
 - (i) Hyperthyroidism
 - (ii) Hypothyroidism
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0807

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Marks

- 1. Attempt any EIGHT of the following:** **16**
- a) Define the following (any two)
- (i) Laxatives
 - (ii) Pharmacognosy
 - (iii) Balsam
- b) Write the role of ‘Dioscoride’ and ‘Seydler’ in the development of pharmacognosy.
- c) State which part of the plant is used in case of
- (i) Belladonna
 - (ii) Rauwolfia
 - (iii) Ipecac
 - (iv) Colchicum
- d) Write example of pharmaceutical aid obtained from:
- (i) Animal source
 - (ii) Mineral source

P.T.O.

- e) Mention synonym of the following crude drug:
- (i) Asafoetida
 - (ii) Liquorice
 - (iii) Aconite
 - (iv) Tulsi
- f) Explain Galenical pharmacy. Who discovered it?
- g) Give the name of the drug which passes the following chemical test.
- (i) Vitali-Morin test
 - (ii) Swelling factor test
 - (iii) Modified Borntrager's test
 - (iv) Fiehe's test
- h) Describe morphological characters of clove with diagram.
- i) What is Garbling?
- j) Name the drug having following microscopical characters (any two)
- (i) Lignified trichomes
 - (ii) Fibrovascular bundle
 - (iii) Paracytic stomata.
- k) Write the name of the drug which has following use:
- (i) Galactogogue
 - (ii) Dental analgesic
 - (iii) Diuretics
 - (iv) Brain tonic.
- l) Write official requirements of surgical dressings.

2. Attempt any THREE of the following: 12

- a) Explain chemical method of classification of crude drug with its merit and demerit.
- b) Define Glycosides. Classify it on the basis of Glycosidic linkage with example.
- c) Write the synonyms, biological source, chemical constituents of 'Gokhru' OR 'Gymnema'.
- d) Write the method of cultivation and collection of 'Rauwolfia'.
- e) Explain with example (any two)
 - (i) Stomatal Index
 - (ii) Optical rotation
 - (iii) Organoleptic method of evaluation.

3. Attempt any THREE of the following: 12

- a) Describe the different techniques (any three) for isolation of volatile oils.
- b) Draw a well labelled diagram of T. S of cinnamon bark and describe any four microscopical characters.
- c) Write the chemical constituents and uses of the following drug- (any two)
 - (i) Cinchona
 - (ii) Sandalwood oil
 - (iii) Ephedra
- d) Explain with example of the following: (any two)
 - (i) Latex
 - (ii) Condensed tannin
 - (iii) Characteristics of umbelliferous fruit.
- e) Define bark. Describe the methods of collection of barks.

4. Attempt any THREE of the following: 12

- a) Explain the general chemical test for the identification of alkaloids
- b) Define the following with example.
 - (i) Oxytocics
 - (ii) Cardiotonics
 - (iii) Antitussive
 - (iv) Astringents.
- c) Describe the method of preparation of fibre obtained from plant source.
- d) Write the biological source, chemical constituents and uses of 'Garlic'.
- e) Differentiate between organised and unorganised crude drug.

5. Attempt any THREE of the following: 12

- a) Define 'Drug Adulteration' Describe any three methods of adulteration with suitable example.
- b) Name the adulterants and substitute of-
 - (i) Nuxvomica
 - (ii) Digitalis
- c) Enlist the Indigenous system of medicine. Describe the 'Siddha system of medicine'.
- d) Write any two examples of drug belonging to following family-
 - (i) Rubiaceae
 - (ii) Apocynaceae
 - (iii) Burseraceae
 - (iv) Liliaceae
- e) Define Enzymes. Write the biological source, chemical constituents and uses of 'Papaya'.

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[5]

Marks

6. Explain the chemical tests of any FOUR crude drugs:

16

- a) Silk
 - b) Benzoin
 - c) Nux-Vomica
 - d) Shark liver oil
 - e) Gelatin
 - f) Starch
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Marks

1. **Attempt any FIVE of the following:** **20**
- Explain Arrhenius theory of acids and bases with example. Give its limitations.
 - Define antimicrobial agents. Explain mechanism of action of topical antimicrobials.
 - Draw a well labeled diagram of apparatus used for limit test for Arsenic. Name it.
 - Define antioxidants. Enlist the criteria for selection of antioxidant.
 - Define “Achlorhydria”. Write a short mono-graph of drug used for it.
 - Enlist properties for an ideal antacids. Why antacids are preferred in combination?
 - Elaborate the role of iron and calcium in human physiology.
 - Explain physiological acid-base balance.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Discuss mechanism of action of antioxidants. Give properties and uses of hydrogen peroxide.
 - b) Write molecular formula and uses of ammonium chloride and sodium bicarbonate.
 - c) Define quality control and give its importance in pharmacy.
 - d) Write properties and uses of sodium thiosulphate and sodium nitrite.
 - e) Give uses, storage condition and labeling of carbon dioxide gas.
- 3. Attempt any THREE of the following:** **12**
- a) Enlist different “sources of impurities”.
 - b) Elaborate ORS mixture. Give its composition according to WHO.
 - c) Write a note on cyanide poisoning.
 - d) Explain metabolic acidosis and alkalosis. Name one compound used in metabolic acidosis and metabolic alkalosis
 - e) Give medicinal uses of:
 - (i) Zinc oxide
 - (ii) Titanium dioxide
 - (iii) Talc
 - (iv) Kaoline

4. Attempt any THREE of the following: 12

- a) Write formula and uses of ferrous sulphate and calcium gluconate.
- b) Explain radio-opaque contrast media. Give properties and uses of any one compound used for it.
- c) Define the terms:
 - (i) Desensitizers
 - (ii) Emetics
 - (iii) Expectorant
 - (iv) Laxatives
- d) Explain the principle involved in limit test for iron with reactions.
- e) Define respiratory stimulants. Give properties and uses of ammonium carbonate.

5. Attempt any THREE of the following: 12

- a) What are inhalants? Give properties and uses of nitrous oxide.
- b) Define antidote and classify it.
- c) Enlist various intra and extra cellular electrolytes. Give properties and uses of sodium chloride.
- d) Explain anti carries agent giving example
- e) Define and classify gastro intestinal agents with example.

6. Attempt any THREE of the following: 12

- a) Give biological role of oxygen. Give properties and uses of oxygen.
 - b) Define Radiopharmaceuticals. Enlist its various applications.
 - c) Write two identification tests for:
 - (i) Calcium
 - (ii) Chlorides
 - d) Explain with examples:
 - (i) Heamatinic
 - (ii) Systemic alkaliser
 - e) Define topical agents. Discuss the uses of astringents with examples.
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0805

21819

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Marks

1. **Attempt any EIGHT of the following:** **16**
- Give any four reasons for film coating.
 - Explain any four factors affecting size reduction.
 - Define drug and dosage forms.
 - Give the significance of drying.
 - Write the difference between hard and soft gelatin capsule.
 - Find out the proportion of procaine HCL which will yield solution iso-osmotic with blood plasma.
Given: F.P of 1% procaine HCL = -0.122°C .
 - Explain tyndallisation process.
 - List the steps involved in slugging method.
 - Write the advantages of water as solvent for extraction.
 - Write the precautions to be taken while placing the material in hot air oven.

P.T.O.

- 2. Attempt any FOUR of the following:** **12**
- a) Define emulsion and list the different emulsifying agents.
 - b) Write the salient features of fourth edition of I.P.
 - c) Write any three ideal qualities of packing material and any three disadvantages of glass as a material for packing.
 - d) Explain the following evaluation test for tablets. (any one)
 - (i) Friability
 - (ii) Disintegration
 - e) Describe aerosol container with labeled diagram.
 - f) Explain construction and working of Cutter Mill or Hammer Mill.
- 3. Attempt any FOUR of the following:** **12**
- a) Explain the working of ball mill with a well labeled diagram and give any two advantages.
 - b) Explain construction and working of cyclone separator with a well labeled diagram.
 - c) Describe the stages of percolation.
 - d) Explain various grades of powders.
 - e) Write the applications of simple distillation in pharmacy.
 - f) State the following:
 - (i) Arista
 - (ii) Churna
 - (iii) Taila.

- 4. Attempt any FOUR of the following: 12**
- a) Describe the factors which affect rate of the evaporation of liquid.
 - b) Describe construction of autoclave with diagram.
 - c) Explain working, construction of fitter leaf with neat diagram.
 - d) Describe working of FBD with well labeled diagram.
 - e) Explain the types of immunity.
 - f) Describe the process of manufacturing of hard gelatin capsules.
- 5. Attempt any FOUR of the following: 12**
- a) Describe the method of preparation of BCG vaccine with dose, storage and uses.
 - b) Give the significance of sterilization using bactericidal solution, explain the method and name the bactericidal agents.
 - c) Describe the method of distillation for immiscible solutions.
 - d) Explain the construction and working of triple roller mill.
 - e) Write the stages involved in sterilization of surgical dressings.
 - f) How will you prepare 5 fl. Oz solutions and using that prepare a 5 litre 1 in 2000 solution?
- 6. Attempt any FOUR of the following: 16**
- a) Explain any four manufacturing defects in tablet manufacturing.
 - b) What is aseptic technique? List the various sources of contamination and explain the sterility test.
 - c) Find the volume of 20%, 15%, 10% and 8% alcohol should be mixed to get 12% alcohol 300 ml.
 - d) Define mixing, explain the types and mechanism of mixing.
 - e) Discuss novel drug delivery systems.
 - f) Explain the method of hot percolation process with well labeled diagram and write its limitations.
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