

0805

11718

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) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

- 1. Answer any EIGHT of the following:** **16**
- Why glycerine is used as a base in throat paints?
 - Define the term “Pharmacopoeia”.
 - Why glass containers are not preferred these days.
 - Write the importance of particle size reduction in pharmacy.
 - Define the terms ‘size separation’ and ‘sieve’.
 - Name the different mechanisms which are applicable in mixing of powders.
 - Name the commonly used filter aids.
 - What are the different types of distillation?
 - Write the application of spray dryer.
 - Explain the term ‘pasteurisation’.
 - Discuss in brief about B.C.G. vaccine.
 - Describe in brief ‘churnas’.

P.T.O.

2. Answer any FOUR of the following:**12**

- a) Differentiate between active immunity and passive immunity.
- b) What are the main objectives of mixing? Give the list of equipments used for mixing of semi-solids.
- c) Differentiate between filtration and clarification. Enlist the various filter media used in pharmacy.
- d) Explain the construction and working of 'filter candle'.
- e) Write the advantages and disadvantages of tablets.
- f) Explain in detail about maceration with adjustment. How does it differ from simple maceration process?

3. Answer any FOUR of the following:**12**

- a) Write the advantages and disadvantages of an evaporating pan.
- b) Define the terms :
 - (i) Sublimation
 - (ii) Evaporation
- c) Write the applications of simple distillation in pharmacy.
- d) How will you separate two immiscible liquids in pharmacy?
Draw a labelled sketch of the apparatus used in the laboratory.
- e) Discuss the theory construction and working of freeze drying apparatus.
- f) Discuss in brief about. Gaseous sterilization.

- 4. Answer any FOUR of the following:** **12**
- a) Write in detail about moist heat method of sterilization.
 - b) Explain the term 'aseptic techniques'. What are the various points to be considered while designing an aseptic room?
 - c) Discuss in brief about moist granulation method.
 - d) Why coating of tablet is done? What are the different methods of coating?
 - e) Why ophthalmic ointments are now a days packed in capsules?
 - f) What should be the properties of powder to be filled in hard gelatin capsules?
- 5. Answer any FOUR of the following:** **12**
- a) Write in brief about 'Mantoux test'.
 - b) Explain the term 'Immunological products'. Discuss any one vaccine in brief.
 - c) Discuss in brief about 'Multiple Maceration'.
 - d) Why plastic containers are more commonly used now a days? Write its demerits.
 - e) Explain the factors which affect the rate of evaporation of a liquid.
 - f) Calculate the quantity of 60% alcohol required to make 500 ml of 20% alcohol.

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

- a) Define 'Homogenisation'. Write the principle of homogenisation. Write in detail about 'Colloidal Mill'.
 - b) Draw a well labelled diagram of 'Soxhlet apparatus'. Mention the various limitations of continuous hot percolation process.
 - c) Give in brief the history of the 'Pharmacopoeia of India'.
 - d) How will you classify different dosage forms?
 - e) Write the principle, construction, working and uses of the disintegrator.
 - f) Describe the principle, construction, working and uses of cyclone separator.
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0806

11718

3 Hours / 80 Marks

Seat No.

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- Instructions* –
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 - (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) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any EIGHT of the following: 16
- a) Explain the following terms. (Any 2)
 - (i) Achlorhydria
 - (ii) Emetics
 - (iii) Astringents
 - b) Write chemical incompatibilities of the following. (Any 2)
 - (i) Hypophosphorus acid
 - (ii) Sulphurdioxide
 - (iii) Ferrous Sulphate
 - c) Give synonyms for the following. (Any2)
 - (i) Magnesium Sulphate
 - (ii) Sodium Potassium Tartarate
 - (iii) Precipitated Sulphur

P.T.O.

- d) Write molecular formula for the following. (Any 2)
- (i) Sodium Metabisulphite
 - (ii) Calcium Carbonate
 - (iii) Stannous Fluoride
- e) Discuss uses of the following compounds. (Any 2)
- (i) Sodium Nitrite
 - (ii) Sodium Acetate
 - (iii) Sodium Thiosulphate
- f) Discuss the uses of boric acid. Discuss the effect of heat on boric acid.
- g) Write properties and uses of calcium hydroxide.
- h) Explain the importance of Glycerine in the assay of boric acid.
- i) Write properties, storage and handling of NaOH.
- j) Classify antacids with examples. Write two properties of aluminium hydroxide gel.
- k) Give two identification test for each ion :-
- (i) Chloride
 - (ii) Sulphate
- l) Write uses and storages and labelling of Oxygen.

2. Attempt any FOUR of the following:

12

- a) Define Antacids. Explain why combination antacid therapy is preferred over single antacid therapy with examples.
- b) Explain Protectives and Adsorbents. Give properties and uses of Kaolin.
- c) Name three official compounds of iron along with their molecular formula.
- d) Explain the principle along with reactions involved in limit test for sulphate IP.
- e) Discuss biological effects of Radiations.
- f) Explain the term 'Inhalants' Mention uses and properties of carbondioxide.

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

- a) Define antioxidants. Discuss properties required of an ideal antioxidant.
- b) Define the following terms with examples.
 - (i) Expectorants
 - (ii) Antidotes
- c) Explain properties, uses and storage conditions of hydrogen peroxide.
- d) Discuss the role of calcium cation in the body.
- e) Explain importance of 'Electrolyte Combination Therapy' with special reference to ORS.
- f) Discuss the properties and uses of Ammonium Chloride.

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

- a) Discuss the effects of impurities present in the pharmaceuticals.
- b) Classify antidotes based on mechanism of action. Mention the antidotes for cyanide poison.
- c) Define mEq/L. Calculate the mEq. of sodium chloride in one litre of 0.90% w/v solution.
- d) Enlist the various units used to measure radioactivity.
- e) Explain the importance of use of the following reagents :-
 - (i) Thioglycollic acid in iron limit test IP
 - (ii) Bariumchloride in sulphate limit test IP.
 - (iii) Mercuric Chloride Paper in Arsenic Limit Test IP.
- f) Define buffers. Explain mechanism of action of buffers.

5. Attempt any FOUR of the following: 12

- a) Which salt is commonly used in Sodium Replacement Therapy? Mention various preparations containing it.
- b) Discuss the various handling and storage conditions for Radioisotopes.
- c) Discuss Lowry-Bronsted Theory for acid and base with examples. Explain its advantages over Arrhenius Acid-Base theory.
- d) Mention the synonyms and uses of :-
 - (i) Hydrochloric acid
 - (ii) Sodium bicarbonate
 - (iii) Zinc Sulphate
- e) Enlist various Iodine preparations. Explain role of Iodine in body.
- f) Explain the theory involved in the assay of hydrogen peroxide with reactions.

6. Attempt any FOUR of the following: 16

- a) Enlist the various sources of impurities found in pharmaceutical substances. Describe any two.
 - b) Define 'Topical Agents'. Classify them with examples.
 - c) Discuss Arsenic Limit Test IP along with the apparatus used and reactions involved.
 - d) Enlist the major anions and cations found in body fluids. Explain how physiological acid-base balance is maintained.
 - e) Classify the G.I.T. agents with examples. Discuss uses and properties of Bismuth subcarbonate.
 - f) Explain Radio-Opaque Contrast Media. Discuss Synonym, Properties and Uses of Barium Sulphate.
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3 Hours / 80 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
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Marks

- 1. Attempt any EIGHT of the following:** **16**
- a) Define the following:
- (i) Oxytocics
 - (ii) Antitussives
- b) Name the family to which the following crude drugs belong to:
- (i) Pyrethrum
 - (ii) Garlic
 - (iii) Myrrh
 - (iv) Coriander
- c) What are pharmaceutical aids? Give examples.
- d) Write contribution of following scientist to pharmacognosy.
- (i) Sushruta
 - (ii) Galen

P.T.O.

- e) Write the synonym for the following crude drugs:
- (i) Rauwalfia
 - (ii) Tulsi
 - (iii) Ashwagandha
 - (iv) Chaul moogra oil
- f) Mention which part of the plant is used as crude drug in case of:
- (i) Arjuna
 - (ii) Ginger
 - (iii) Belladonna
 - (iv) Aconite
- g) Name the drug which contains the following chemical constituents:
- (i) Vasicine
 - (ii) Emetine
 - (iii) Vincristine
 - (iv) Purpurea glycosides A and B
- h) Write ideal properties of sutures.
- i) Describe Morphological characters of Ginger with diagram.
- j) Enlist various Leaf constants used for drug evaluation.
- k) State the uses of the following crude drugs:
- (i) Glycyrrhiza
 - (ii) Yeast
- l) Mention the adulterants of dried clove flower buds.

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

- a) Explain 'Pharmacological system of classification of crude drugs along with its advantages and disadvantage.
- b) Explain 'Life cycle of Ergot'.
- c) Write Biological source chemical constituents and uses of Amla or Cinchona.
- d) Write about 'Ayurveda system of Medicine'.
- e) Define the following with examples.
 - (i) Carminatives
 - (ii) Laxatives
- f) Draw a neat and well labelled diagram of "T.S. of cinnamon bark".

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

- a) What are the different means by which crude drugs are adulterated?
- b) Describe method of collection and preparation of 'Senna Leaves' for market.
- c) What are alkaloids? Name the reagents used for identification of alkaloids by precipitation method.
- d) Write the Biological source, chemical constituents and uses of Gokhru or Nutmeg.
- e) Explain the following:
 - (i) Mace
 - (ii) Balsam
 - (iii) Resins
- f) Describe the method of preparation for silk fibre.

- 4. Attempt any FOUR of the following:** **12**
- a) What are volatile oils? Explain “Enfleurage method” for extraction of volatile oils.
 - b) What is Drug Evaluation? Explain ‘Morphological evaluation’.
 - c) Name the crude drugs used as Astringent. Write the Biological source and chemical constituents of any one drug.
 - d) What are glycosides? Explain ‘Saponin Glycosides’.
 - e) Write Biological source, chemical constituents and uses of “Lemon oil” or Sandalwood.
 - f) Define Antidiabetics? Give examples of antidiabetic crude drug and write the biological source of any one drug.
- 5. Attempt any FOUR of the following:** **12**
- a) What are tannins? Classify them.
 - b) Differentiate between organised and unorganised crude drugs with example.
 - c) Explain the characteristics features of umbelliferous drug.
 - d) Write biological source of Honey. Explain ‘Fiehe’s test’.
 - e) What are surgical dressings? Write the official requirements of surgical dressings.
 - f) Write chemical tests for Asafoetida.
- 6. Write chemical tests for the following crude drugs: (any FOUR)** **16**
- a) Aloe
 - b) Benzoin
 - c) Gelatin
 - d) Wool
 - e) Nux-vomica
 - f) Ergot
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00808

11718

3 Hours / 80 Marks

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Marks

1. Attempt any EIGHT from following :

2 × 8 = 16

- (a) Write the functions of mitochondria & nucleus.
- (b) Draw the structures of alanine & phenylalanine.
- (c) Explain mutarotation with example.
- (d) Write Liebermann burchard & salkowski tests.
- (e) Give diagrammatic representation of weld's visual cycle.
- (f) Discuss functions of electrolytes in life processes.
- (g) Explain the term 'Enzyme specificity' with examples.
- (h) Write in short about Alkaptonuria.
- (i) Give different types of leucocytes.
- (j) Explain isoelectric pH of amino acid.
- (k) Justify why sucrose is non-reducing sugar.
- (l) Differentiate between fats & oils.

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2. Attempt any FOUR from following :**3 × 4 = 12**

- (a) Draw neat, well labelled diagram of animal cell.
- (b) Discuss biological role of proteins.
- (c) Classify carbohydrates with examples.
- (d) Define the terms :
 - (i) Acid value
 - (ii) Saponification value
 - (iii) Iodine value
- (e) Explain denaturation of proteins in detail.
- (f) Describe diabetes mellitus in detail.

3. Attempt any FOUR from following :**3 × 4 = 12**

- (a) Explain nutritional deficiency diseases of proteins.
- (b) Describe polysaccharides in detail.
- (c) Classify lipids with examples.
- (d) Give coenzyme forms of following vitamins :
 - (i) Thiamine
 - (ii) Riboflavin
 - (iii) Niacin
- (e) Describe phospholipids with examples.
- (f) Give biochemical role of pyridoxine & folic acid.

4. Attempt any FOUR from following :**3 × 4 = 12**

- (a) Explain water balance of our body.
- (b) Classify enzymes on the basis of reaction catalysed by them.
- (c) Explain the terms : Gluconeogenesis, Glycogenolysis & Glycogenesis.
- (d) Enlist different abnormal constituents of urine; give significance of each constituent.
- (e) Give biochemical role of following :
 - (i) Sodium
 - (ii) Phosphorus
 - (iii) Iron
- (f) Define the terms :
 - (i) Induced enzymes
 - (ii) Constitutive enzymes
 - (iii) Isoenzyme

5. Attempt any FOUR from following :**3 × 4 = 12**

- (a) Define dehydration; explain types of dehydration.
- (b) Discuss various diagnostic applications of enzymes.
- (c) Define the terms :
 - (i) Catabolism
 - (ii) Ketosis
 - (iii) Arteriosclerosis

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- (d) Explain megaloblastic anaemia & sickle cell anaemia.
- (e) Enlist different factors affecting rate of enzyme catalysed reaction; explain effect of hydrogen ion concentration in detail.
- (f) Describe biosynthetic pathway of urea in body.

6. Attempt any FOUR from following :

4 × 4 = 16

- (a) Write deficiency symptoms of Vit-A, Vit-D, Vit-E, Vit-K.
 - (b) Describe the importance of calcium in human body.
 - (c) Explain pathway of glycolysis in detail.
 - (d) Explain β oxidation of fatty acids in detail.
 - (e) Explain kreb cycle in detail.
 - (f) Enlist different leucocyte disorders; explain any two disorders in detail.
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Marks

1. Attempt any EIGHT of the following :

8 × 2 = 16

- (a) Define the terms :
 - (i) Meninges
 - (ii) GFR (Glomerular Filtration Rate)
- (b) 'Mitochondria is called power house of cell' State reason.
- (c) Classify synovial joints with example.
- (d) State the composition of blood.
- (e) Define Suture. Name any two sutures and bones involved in it.
- (f) Draw and label reflex arc.
- (g) Write the changes occur in male at puberty.
- (h) Name the bones of upper limb.

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P.T.O.

- (i) Define plasma and serum.
- (j) Enlist the muscles of mastication.
- (k) Explain terms : (i) Medial (ii) Lateral.
- (l) Write functions of Lymphatic system.

2. Attempt any FOUR of the following :

4 × 3 = 12

- (a) State the differences between smooth muscle and skeletal muscle.
- (b) Explain the mechanism of respiration.
- (c) Draw a well-labelled diagram of internal structure of heart showing blood flow.
- (d) Define Skeleton. State it's functions.
- (e) Explain in short :
 - (i) Rheumatoid arthritis
 - (ii) Gout
- (f) Explain formation and composition of Lymph.

3. Attempt any FOUR of the following :

4 × 3 = 12

- (a) Explain portal circulation. Give its importance.
- (b) State the functions of Liver.
- (c) Draw a well-labelled diagram of female reproductive system.
- (d) Write the effects of sympathetic and parasympathetic nerve stimulation on
 - (i) Heart (ii) Blood vessels and (iii) Pupil.
- (e) 'Pancreas is called as exo-endocrine gland.' State reason.
- (f) Define and explain neuromuscular junction.

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

- (a) Explain the three phases of menstrual cycle.
- (b) Draw a well-labelled diagram of sagittal section of an eye.
- (c) Mention the digested end products and enlist the enzymes involved in
 - (i) carbohydrate
 - (ii) protein digestion
- (d) Define hormone. Enlist the hormones secreted by anterior and posterior pituitary gland.
- (e) Explain the functions of skin.
- (f) Explain terms and write normal value :
 - (i) Vital capacity
 - (ii) Tidal volume

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

- (a) What is auditory Ossicle ? Name the bones involved in it. Explain its function.
- (b) Explain the process of urine formation.
- (c) Explain the process of micturition.
- (d) Draw labelled diagram of cerebrum showing functional areas.
- (e) State the composition and functions of gastric juice.
- (f) Name any six cranial nerves with function.

6. Attempt any FOUR of the following :**4 × 4 = 16**

- (a) Classify primary tissues in detail.
- (b) Write anatomy and physiology of thyroid gland.

P.T.O.

- (c) Differential between arteries and veins.
 - (d) Write the mechanism of blood coagulation.
 - (e) Explain conducting system in heart.
 - (f) Define the terms :
 - (i) Myopia
 - (ii) Bronchitis
 - (iii) Menopause
 - (iv) Stenosis
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00810

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Marks

1. Attempt any EIGHT of the following :

8 × 2 = 16

- (a) Define Nutrition and classify food.
- (b) Name sources and deficiency diseases of (i) Iodine (ii) Iron.
- (c) Name the vitamin causing following deficiency disease :
 - (i) Pernicious anaemia
 - (ii) Blood clotting disorders
 - (iii) Colour blindness
 - (iv) Osteoporosis
- (d) Name any two STD with their causative agents.
- (e) What do the following acronyms stand for ?
 - (i) BCG
 - (ii) BMR
 - (iii) HIV
 - (iv) DPT
- (f) Define the terms :
 - (i) Aerobes
 - (ii) Anaerobes

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- (g) Write two advantages and two disadvantages of Terminal methods of family planning.
- (h) Name two diseases of each of following :
 - (i) Mosquito
 - (ii) Rat
- (i) Name the disease due to following causative agent :
 - (i) *Treponema pallidum*
 - (ii) Varicella Zoster virus.
- (j) Name causative agents of following disease :
 - (i) Tuberculosis
 - (ii) Malaria
- (k) Draw well labelled diagram of virus.
- (l) Differentiate between communicable and non-communicable diseases.

2. Attempt any FOUR of the following :

4 × 3 = 12

- (a) What is epidemiology ? Explain different types of epidemiological methods.
- (b) What is disinfection procedures for
 - (i) Faeces & urine
 - (ii) Surgical instruments
 - (iii) Sputum
- (c) Give sources & functions of Vitamin-C. Mention symptoms of scurvy.
- (d) What is composition of pure air ? How air pollution can be control ?
- (e) What is family planning ? Give advantages & disadvantages of condom.
- (f) Classify bacteria according to their shape.

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3. Answer any FOUR of the following:

4 × 3 = 12

- (a) Discuss the role of community pharmacist.
- (b) Discuss in brief hospital acquired infections.
- (c) Explain Universal Immunization programme.
- (d) What are general signs & symptoms of fractures ? Describe general management of fractures.
- (e) Write prevention, control and management of cardio vascular diseases.
- (f) Define the terms :
 - (i) Incubation period
 - (ii) Disinfection
 - (iii) Immunity

4. Attempt any FOUR of the following :

4 × 3 = 12

- (a) Define Vaccine. Differentiate between Active & Passive immunity.
- (b) Name various sources of water. Describe household method of water purification.
- (c) Define the terms :
 - (i) Social health
 - (ii) Mental health
 - (iii) Physical health
- (d) What is solid waste ? Name various methods for its disposal. Describe any one in short.
- (e) What are intrauterine devices ? Classify them along with their mechanism of action.
- (f) What are types of cancer ? Explain factors responsible for it.

P.T.O.

5. Give causative agents, mode of transmission & prevention of any FOUR of the following diseases :

12

- (i) Plague
- (ii) Polio
- (iii) Rabies
- (iv) Leprosy
- (v) Cholera
- (vi) Diphtheria

6. Attempt any FOUR of the following :

 $4 \times 4 = 16$

- (a) Explain the term :
 - (i) Reservoir
 - (ii) Cold chain
 - (iii) Antibody
 - (iv) Quarantine
 - (b) What is cardiac arrest ? Explain CPR.
 - (c) Write a note on Gram staining method.
 - (d) Write "Rule of Nine" for estimation of percentage of burns. Write emergency treatment for burns.
 - (e) Give causes types, prevention & management of Diabetes Mellitus.
 - (f) Define Health. List various determinants of health. Explain any two determinants.
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