

2024

PHARMACEUTICS

Time Allowed 3 Hours

Full Marks: 80

1. Fill up the blanks with appropriate word(s) (Any ten):**1x10**

- i) The first edition of IP was published in the year 1955.
- ii) Methylparaben, propylparaben are examples of _____.
- iii) Fibrous materials are size reduced by _____ mill.
- iv) Triple roller mill is used for the preparation of _____.
- v) Soxhlet apparatus is used in _____.
- vi) Darcy's Law is associated with _____.
- vii) _____ is a manufacturing defect of tablet.
- viii) Example of Glidant in Tablet preparation is _____.
- ix) Enteric coated tablets disintegrate in _____.
- x) The biggest capsule size is denoted by _____.
- xi) Ball mill works on the principle of _____.

2. Write short note (Any ten) :**1x10**

- a) Suppository b) Mixture c) BCG vaccine d) Lyophilization e) Emulsifying agents
 f) GMP g) Percolation h) Uses of Cyclone separator i) Ointments
 j) LVP k) Soda lime Glass

3. Short answer type questions (Any ten):**3x10**

- i) Discuss the advantages of granules compared to powder.
- ii) Differentiate between Infusion & Maceration.
- iii) What do you understand by dosage form? Classify.
- iv) Differentiate between Active & Passive immunity.
- v) Define preservatives. Classify Preservatives based on their mechanism of action.
- vi) Discuss the factors affecting filtration.
- vii) Discuss the ideal properties of packaging materials.
- viii) Write a note on Soft Gelatin Capsule.
- ix) What are the objectives of mixing?
- x) Classify powder as per IP grade.
- xi) Classify preservatives as per source, solubility, dosage form, food items, parenteral preparation, topical preparation etc.

4. Long answer type questions (Any six):

- i) Define Extraction. Briefly discuss Maceration and Percolation. 1+2+2
- ii) What do you mean by QC & QA? Differentiate between QC & QA. 2+3
- iii) What is Immunity? Name different types of Immunity. What do you mean by "vaccine"? Name different types of vaccines with examples. 1+1+1+2
- iv) Various steps involved in preparation of Sugar Coating Tablets.
- v) Write about the working of the Fluid Bed Dryer.
- vi) Flow chart of Steps involved in wet granulation tablet preparation. ✓
- vii) Discuss the advantages of Capsule. Differentiate between hard gelatin and soft gelatin capsules.
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Pharmaceutical Chemistry

Time Allowed: 3 Hours

Full Marks: 80

Answer all Questions.

1. **A. Fill in the blanks with appropriate words:** 1×5
- Full name of SSRI is _____.
 - Insulin hormone is made up of _____ number of amino acids.
 - Remdesivir is _____ agent.
 - The unsubstituted bicyclic ring system of penicillin is called as _____.
 - HPLC stands for _____.
- B. Choose the correct alternative:** 1×15
- Which of the following is not an Anti-fungal drug? – ~~(i) Ketoconazole~~ (ii) Rifampicin (iii) Amphotericin B ~~(iv) Griseofulvin~~
 - The difference between experimental mean value and true value is known as – (i) Relative Error (ii) Absolute error (iii) Systemic error (iv) Random error
 - Amoxicillin is an antibiotic of the group – ~~(i) Beta lactam~~ (ii) Polyene (iii) Macrolide (iv) None of these
 - PAS is therapeutically used in – (i) Malaria (ii) Gonorrhoea ~~(iii) Tuberculosis~~ (iv) None of these
 - Ramipril is a – (i) Diuretics ~~(ii) Anti-hypertensive~~ (iii) Anti-viral (iv) Anti-neoplastic agent
 - Cool is any temperature between – (i) -2 to 0°C (ii) 0 to 2°C ~~(iii) 2 to 8°C~~ (iv) 8 to 25°C
 - Metformin is a – ~~(i) Biguanide~~ (ii) Sulphonyl urea (iii) Polypeptide (iv) None of these
 - Heteroatoms present in Thiazole are – ~~(i) S and N~~ (ii) S and O (iii) N and O (iv) N and N
 - FeSO₄.7H₂O is also known as – (i) Blue vitriol (ii) Yellow vitriol ~~(iii) Green vitriol~~ (iv) White vitriol
 - Aluminium hydroxide gel is used as – ~~(i) Antacid~~ (ii) Haematinics (iii) Cardio tonic (iv) Diuretics
 - Acetyl salicylic acid is used as – (i) Anaesthetic ~~(ii) NSAID~~ (iii) Anticonvulsant (iv) Sedative
 - Arsenic limit test is done in – (i) Nessler cylinder ~~(ii) Gutzeit apparatus~~ (iii) Test tube (iv) Round bottom flask
 - ~~m) Benzalkonium chloride~~ is – (i) Anionic surfactant (ii) Cationic surfactant (iii) Neutral substance (iv) Radioactive substance
 - ~~n) Which is orange red crystalline powder?~~ – (i) Primaquine ~~(ii) INH~~ ~~(iii) Rifampicin~~ (iv) Ethambutol
 - o) Naloxone is a – (i) Analgesic (ii) Antipyretic ~~(iii) Morphine antagonist~~ (iv) None of these
2. **Answer any 10 (Ten) questions from the following:** 3×10
- Write on Storage condition, physical properties and formulation of Nor-epinephrine/Atropine sulphate? 3×10
 - ~~b) Define accuracy and precision.~~ ✓
 - ~~c) Write a note on Nitrous Oxide as a medicinal gas.~~ ✓
 - ~~d) Classify Anti-neoplastic agents with example.~~ ✓
 - ~~e) Write down the structure, uses and nomenclature of Captopril.~~ ✓
 - ~~f) Mention the role of lead acetate cotton plug in the limit test for arsenic.~~ ✓
 - ~~g) Write a short note on limit test for Iron.~~ ✓
 - ~~h) Write down the structure, nomenclature of Diazepam and ofloxacin~~ ✓

- ✓ i) Write the chemical classification of Sedative and Hypnotic drugs with examples. ✓
- ✓ j) Write the properties and uses of Chlorhexidine gluconate. ✓
- ✓ k) Write a note on precipitation titration. ✓

3. **Answer any 6 (Six) questions from the following:**

- ✓ a) Define and classify Antacids with examples. Why do we prefer combined antacids? 5×6
- ✓ b) Define the term impurity. Explain various sources of impurities present in pharmaceuticals.
- ✓ c) Write notes on Oral hypoglycaemic agents. Mention structure, chemical name of Metformin.
- ✓ d) Classify Anti-tubercular drugs. Write down the structure, chemical name and formulation of INH.
- ✓ e) Define and classify NSAIDs with examples. Write down the structure and chemical name of Paracetamol.
- ✓ f) Write the chemical formula, synonym, properties, uses and storage conditions of Ferrous Sulphate.
- g) Write the structure of – (i) Aspirin (ii) Adrenaline (iii) Propranolol (iv) Cyclophosphamide (v) Cisplatin.

2024

PHARMACOGNOSY

Full Marks: 80

Time Allowed: 3 hours

Group-A**1. A) Fill in the blanks:**

[1x10=10]

- Senna leaves contain _____ type of glycosides.
- Triglycerides of ricinoleic acid are found in _____.
- Opium belongs to the _____ family.
- The pungent principle of ginger is _____.
- _____ is known as the father of the Homeopathy system of medicine.
- The crude drug used as dental analgesic is _____.
- The alkaloid of tea leaf which is used as a stimulant is _____.
- The protein in silk is _____.
- _____ has anti-diabetic properties.
- Nutmeg contains _____ oil.

B) Define the following:

[1x10=10]

- Adulteration
- Carminatives
- Anti-tussives
- Oxytocics
- Sutures
- Tannins
- Organised crude drugs
- Pharmaceutical aids
- Anti-Tumours
- Nutraceuticals

Group-B**2. Answer any 10 (ten) questions:**

[3x10=30]

- State the advantages and disadvantages of Chemical classification of crude drugs.
- Define the stomatal number and stomatal index of leaf drugs.
- Explain the isolation process of glycosides.
- Write the significance of evaluating the ash value of a crude drug.
- Define cardiotonics. Give an example of a cardiotoxic with its biological source.
- Write down the biological source, chemical constituents and therapeutic uses of Rauwolfia.
- Write a short note on anti-rheumatics.
- Name an anti-malarial drug. Write down its biological source and chemical constituents.
- Write a short note on Surgical Fibres.
- Explain 'Tridosha' as per Ayurvedic system of medicine.
- Write a brief note on Omega-3 fatty acids.

Group-C**3. Answer any 6 (six) questions:**

[5x6=30]

- Write a note on Biological methods for evaluation of crude drugs.
- Classify alkaloids on the basis of chemical nature with suitable examples.
- Write down the biological source, chemical constituents present and therapeutic uses of Fennel and Ephedra.
- Mention the chemical constituents present in the following drugs:
 - Aloe
 - Ginger
 - Black catechu
 - Vasaka
 - Acacia
- Name an anti-dysenteric drug. State its biological source, constituent chemicals and uses.
- Name the different types of Ayurvedic formulations. Explain the preparation of Asava.
- Briefly describe the use of sandalwood oil and olive oil as herbal cosmetics.

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PH-I/4 (N)

2024

HUMAN ANATOMY AND PHYSIOLOGY

Time Allowed: 3 hours

Full marks:80

1. Answer the following:

20 X 1 = 20

- i) Study of cell is called as-
a) Arthrology b) Histology c) Mycology d) Cytology
- ii) Fertilization of an ovum takes place in
a) Cervix b) Fallopian tube c) Uterus d) Ovary
- iii) Bile is stored in -
a) Gallbladder b) Liver c) Stomach d) Pancreas
- iv) Largest gland in the Body is
a) Pituitary gland b) Liver c) Spleen d) Heart
- v) Which is called Pacemaker of the Heart?
a) A-V node b) S-A node c) Bundle of His d) Purkinje fibre
- vi) Which part of the body is called voice box?
a) Pharynx b) Larynx c) Epiglottis d) Pineal gland
- vii) Appearance of blood in urine is called-
a) Haemolysis b) Haematuria c) Haemopoeisis d) Haemostasis
- viii) Which one of the following blood group is considered as universal donor?
a) A b) B c) AB d) O
- ix) Proteolytic enzyme in gastric juice is _____.
- x) The unit of kidney is known as _____.
- xi) Left lung has _____ lobe.
- xii) ESR in blood stands for _____.
- xiii) The normal lifespan of RBCs is _____.
- xiv) Thyroid gland secretes triiodothyroxine, _____ and calcitonin.
- xv) Gigantism is caused by High GH.
- xvi) The unit of B.P. is mm of Hg.
- xvii) Bone is a _____ tissue. sep-
- xviii) The largest bone of human body is Femur. Femur.
- xix) Diabetes Incipidus happens due to deficiency of vasopression
- xx) Pepsinogen is converted to pepsin in presence of HCl.

2. Answer any 10 (Ten) questions:

10 X 3 = 30

- a) What do you know about Cardiac Cycle?
 b) Functions of Liver
 c) Describe reflex arc with diagram.
 d) Classify nervous system.
 e) Describe the mechanism of Respiration.
 f) Write down the functions of Progesterone, FSH and LH.

Angiotensin
Bile
fat stone

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- ✓g) Write down the names and functions of three salivary glands.
- ✓h) Write the names and functions of hormones secreted from the adrenal gland. •
- ✓i) Compare Exocrine and Endocrine gland.
- ✓j) Define vital capacity, expiratory reserve volume of lung, tidal volume of lung.
- ✓k) Write the full form of RBC, WBC, ANS, TSH, GIT and GFR.
- l) Write a note on muscle contraction.

3. Answer any 6 (six) questions:

6 X 5 = 30

- ✓a) Write the process of blood flow through heart with diagram.
 - ✓b) Define cardiac output. Describe Blood Coagulation.
 - c) Write a note on Anaemia.
 - ✓d) Draw and label human eye.
 - ✓e) Write the hormones of pancreas and their functions.
 - f) How many numbers of spinal nerves in human? Enlist the names of Cranial nerves.
 - ✓g) Write about the mechanism of urine formation.
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SOCIAL PHARMACY

Time Allowed: 3.00 Hours

Full Marks: 80

1. A. Choose the correct alternative (any ten):

1X10=10

- i) The full form of the ELISA test is-
 a) Enzyme Linked Immunosorbent Assay b) Enzyme Linked Isolation Salute Assay
 c) Energy Linked Isolate Solvent Assay d) None
- ii) Breastfeeding is not recommended for mothers who are suffering from
 a) Hepatitis b) HIV c) Diabetes d) All of these
- iii) NHP stands for
 a) Numeric Health Policy b) Non Health Policy
 c) Neonatal Health Policy d) National Health Policy
- iv) The most important fertility reduction practice is
 a) Abortion. b) Breast feeding c) Vasectomy d) Oral contraception.
- v) Products derived from food sources with extra health benefits in addition to the basic nutritional value found in foods are known as:
 a) Adulterants, b) Vitamins, c) Nutraceuticals, d) Dietary supplements
- vi) National AIDS Control program was launched in India in
 a) 1978 b) 1992 c) 1951 d) 1974
- vii) *Entamoeba histolytica* is the causative organism of
 a) Typhoid b) Cholera c) Plague d) Amoebiasis
- viii) Which one of the following cancers does not form solid neoplasm?
 a) Leukemia b) Lymphoma c) Lipoma d) Sarcoma
- ix) DOT is a national program to address
 a) Malaria b) Filaria c) Tuberculosis d) Japanese Encephalitis.
- x) Causative agent for Ebola virus disease (EVD) belongs to which family of virus?
 a) Paramyxoviridae, b) Coronaviridae c) Herpesviridae d) Filoviridae.
- xi) Which organization released the first indigenously made COVID vaccine in India?
 a) Bharat Biotech b) Cipla c) Serum Institute of India d) Pfizer
- xii) Milk is a poor source of
 a) Calcium b) Protein c) Carbohydrate d) Vitamin C
- xiii) Leprosy is also called
 a) Hartmann's disease b) Hanson's disease
 c) Humprey's disease d) Harry's disease
- xiv) Severe acute respiratory syndrome (SARS) is a serious form of
 a) Blindness b) Pneumonia c) Cancer d) AIDS
- xv) Filariasis is a _____ disease
 a) Bacterial b) Viral c) Protozoal d) Parasitic

B. Answer the following questions (any ten):

1X10=10

- i) Define nutraceuticals.
- ii) Tetanus is a serious bacterial infection caused by _____.
- iii) Causative agent of Tuberculosis _____.
- iv) Typhoid is a respiratory infection [True / False].
- v) Define Demography.
- vi) Osteomalacia is caused by to deficiency of _____.
- vii) Vitamin B₁₂ is also known as _____.
- viii) Bird flu is a contagious disease caused by bacteria [True / False].
- ix) _____ components of food are called bodybuilders.
- x) The WHO's sustainable development goals are _____ and _____.
- xi) Full form of I.U.D. is _____.

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- xii) Bacteria responsible for Leprosy is _____.
- xiii) Define Social Pharmacy.
- xiv) Causative agent of Diphtheria is _____.

2. Answer the following questions (any ten):

10X3=30

- a) State any two objectives of pharmacoeconomics.
- b) Write the advantages and disadvantages of oral contraceptives.
- c) Write about the hazards of water pollution.
- d) Write a note on food drug interaction.
- e) Give the importance of water as a diet.
- f) Give prevention and control of hospital acquired infections.
- g) Write a note on fat- soluble vitamins.
- h) What are the important determinants of Health?
- i) Give examples of three drug food interactions and what would be the advice by the pharmacist to the patient regarding drug administration.
- j) What is the causative agent and mode of transmission of the Amoebiasis?
- k) Write briefly the role of pharmacists in public health.
- l) Write a short note on food poisoning.
- m) What is health insurance?

3. Answer the following questions (any six):

6 X 5 = 30

- a) Define immunity. Explain in detail about the immunization programme. 1 + 4 = 5
- b) Write the causative agent and mode of transmission and prevention of AIDS and Dengue. $2\frac{1}{2} + 2\frac{1}{2} = 5$
- c) Explain different temporary methods of family planning. 5
- d) Write the causative agent and mode of transmission and prevention of Chickenpox and Typhoid. $2\frac{1}{2} + 2\frac{1}{2} = 5$
- e) Write the causative agent and mode of transmission and prevention of Cholera and Malaria. $2\frac{1}{2} + 2\frac{1}{2} = 5$
- f) Write causative organism, incubation period, mode of transmission, signs, and symptoms and prevention of Covid-19. 5
- g) Write the objective of the National Programme for prevention and control of various diseases. 5
- h) Write short notes on (any two): i) Water borne disease ii) Air pollution $2\frac{1}{2} + 2\frac{1}{2} = 5$
- iii) Drugs abuse