STATE MEDICAL FACULTY OF WEST BENGAL
DIPLOMA IN PHARMACY PART-I EXAMINATION
SEPTEMBER - 2026

PHARMACEUTICS
[E.R. 20-11T]

...SANA COLLEGE OF PHARMACY
Estd.-2023
Purba
Bardhaman
W.B., Pin-713141
...(Belgram), Khatra Jn.

Time Allowed – 3 Hours *Full Marks – 80*

Use Separate Answer Script For Each Group.

Group-A

1. Answer all questions: **20×1=20**

(i) What is Pharmacopoeia?
(ii) The 8th edition of I.P. was published in the year _____.
(iii) Who is known as the "Father of Pharmacy Education in India"?
(a) Charaka (b) Sushruta
(c) Prof. APC Ray (d) Prof. ML Shroff.
(iv) What properties should an ideal pharmaceutical packaging material possess?
(v) Extractables and leachables are considerations for Glass packaging. (T/F)
(vi) A major disadvantage of glass is Poor transparency. (T/F)
(vii) An ideal preservative should be effective against a broad range of _____.
(viii) Give two examples of preservatives.
(ix) What are organoleptic agents?
(x) A ball mill reduces particle size mainly by _____ and attrition.
(xi) Write two advantages of a sintered glass filter.
(xii) Sieves separate particles primarily according to:
(a) Density (b) Color
(c) Particle size (d) Solubility.
(xiii) Pessaries are solid/semisolid preparations intended for insertion into the _____.
(xiv) Define lotions.
(xv) Mention the different types of ear preparations.
(xvi) Topical preparations are primarily intended to produce _____ effect at the site of application.
(xvii) Mention any four important requirements of cGMP.
(xviii) Which section is primarily responsible for testing raw materials and finished products?
(a) Production (b) Warehouse
(c) Quality Control (d) Administration.
(xix) What is site-specific drug delivery?
(xx) Liposome is a vesicular drug delivery system. (T/F)

P.T.O

2. Answer the following (*any ten*): **10×3=30**

(i) What are different types of organoleptic agents used in the pharmaceutical formulations?
(ii) Write a short note on Sieves.
(iii) Define Extraction. Write the applications of this unit operation. 1+2
(iv) Explain the phase inversion phenomenon in emulsions.
(v) Write differences between Powders and Granules.
(vi) Describe the process of involved in manufacturing of hard gelatin capsule.
(vii) Define eye ointments. List the advantages of eye drops. 1+2
(viii) Write any six characteristics of injectables.
(ix) Discuss the term calibration and validation in short.
(x) Define: (a) Suppositories, (b) Creams, (c) Liniments.
(xi) Write the objectives and disadvantages of NDDS.

Group-B

3. Answer the following (*any six*): **6×5=30**

(i) Write a short note on various job opportunities in pharmacy.
(ii) Write advantages and disadvantages of glass as a packaging material.
(iii) Explain the principle, construction and working of Silverson mixer homogenizer.
(iv) Enumerate the various tests for quality control of ointments.
(v) Discuss different sources of contamination in an Aseptic area for sterile formulations.
(vi) Give classification of immunological products. Write the general method for preparation of toxoids.
(vii) Define cGMP and explain its importance in pharmaceutical manufacturing plants.

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STATE MEDICAL FACULTY OF WEST BENGAL
DIPLOMA IN PHARMACY Part-I EXAMINATION
SEPTEMBER - 2026

Pharmaceutical Chemistry [ER.20-12T]

Time Allowed - 3 Hours ***Total Marks - 80***

Use separate answer script for each group

Group-A

1. Answer all questions: **20 x 1=20**

(i) Reagent used in the limit test for lead is which of the following?
(a) $BaCl_2$ (b) $AgNO_3$
(c) Thioglycolic Acid (d) H_2S

(ii) Haloperidol belongs to which chemical class of the following?
(a) Barbiturate (b) Butyrophenone
(c) Benzodiazepines (d) None of the above

(iii) Phenytoin is used as:
(a) Anticonvulasant (b) Antidepressant
(c) Antipsyhotic (d) None of the above

(iv) Which one of the following is opioidanalgesic?
(a) Aspirin (b) Morphine
(c) Paracetamol (d) Diclofenac

(v) Which of the following is adrenergic antagonist?
(a) Epinephrine (b) Dopamine
(c) Propronolol (d) Acetyl Choline

(vi) Bacteriostatic agent act on bacteria by:
(a) Killing (b) Stopping the growth
(c) Multiply the bacteria (d) Stimulating

(vii) Which of the following antihypertensive drug inhibit ACE?
(a) Nifedipine (b) Ramipril
(c) Propronolol (d) Clonidine

(viii) Which vitamin is essential for calcium absorption?
(a) Vitamin A (b) Vitamin C
(c) Vitamin D (d) Vitamin B_{12}

(ix) 2 - acetoxybenzoic acid is IUPAC name of?
(a) Paracetamol (b) Aspirin
(c) Mefenamic acid (d) Ibuprofen

(x) Match the followings:

1. Class I	a) Calcium channel blockers
2. Class II	b) Beta - blockers
3. Class III	c) Sodium channel blockers
4. Class IV	d) Potassium channel blockers

(a) 1-a, 2-b, 3-c, 4-d (b) 1-d, 2-b, 3-a, 4-c
(c) 1-b, 2-c, 3-a, 4-d (d) 1-c, 2-b, 3-d, 4-a

(xi) Write the chemical formula of boric acid.

(xii) The sulphonamide used ion for the treatment of burn is _____.

(xiii) The basic structure of penicillin consists of _____ and _____.

(xiv) Antiviral drug used for the treatment of AIDS is Zidovudine. (T/F)

(xv) Give an example of ultra-shortacting barbiturate.

(xvi) L-form of atropine is_____.

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W.B., Pin-713141
Srirampur (Belgram), Khana

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(xvii) Insulin is composed of how many peptide chains?
(xviii) _____ are used in iron deficiency anemia.
(xix) _____ is a plant origin anticancer agent.
(xx) Propofol is a _____.

2. Answer the following (*any ten*): **10x3=30**

(i) Write the principle involved in limit test for Iron.
(ii) Write the molecular formula, Pharmaceutical formulations, storage and uses of Boric Acid.
(iii) Write the structures of:
(a) Furan (b) Pyranand (c) Indole
(iv) State the uses of chloramphenicol, azithromycin, and doxycycline.
(v) Write the formulations, storage conditions, brand names and uses of Aluminum hydroxide gel.
(vi) Write the formulations, storage conditions, brand names and uses of Glibenclamide.
(vii) Write the formulations, storage conditions, brand names and uses of Acetozolamide.
(viii) Give the structure, storage, brand names and uses of Aspirin.
(ix) Write a note on Morphineanalogues.
(x) Classify diuretics drugs.
(xi) Classify Anti-arrhythmic agents.

Group-B

3. Answer the following (*any six*): **6x5=30**

(i) What are NSAID's? Classify them with examples. Give the structure, chemical name, brand names and uses of Paracetamol.
(ii) What are hypoglycemic agents? Classify them with examples. Give the structure, chemical name and formulations of Metformin.
(iii) Define Diuretics and classify with examples. Write the structure, chemical name, brand names and uses of Furosemide.
(iv) Define anti-hypertensive drugs and classify with examples. Write the structure, chemical name and uses of Propranolol.
(v) Write the chemical structure, chemical name, brand names and uses of Phenytoin.
(vi) How many types of titration for analysis of chemical compound areavailable? Explain briefly about Redox titrations.
(vii) Define weak acid and strong acid with example. A concentrated HCl bottle labeled as assay percentage 42 and specific gravity 1.18, calculate the amount of HCl is required for the preparation of 1(M) 100ml solution. What is the percentage of prepared solution?

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Bardhaman
W.B., Pin-713141
Sonarpur (Belgram)

PHARMACOGNOSY
[E.R. 20-13T]

Time Allowed – 3 Hours *Full Marks – 80*

Use Separate Answer Script For Each Group.

Group-A

1. Answer all questions: **20×1=20**

(i) Who wrote *Lehrbuch der Materia Medica*?
(a) Dioscorides (b) Galen
(c) Seydler (d) J.A.Schimdt

(ii) Example of unorganized drug---
(a) Benzoin (b)Datura
(c) Digitalis (d)Senna

(iii) Which of the following drugs is adulterated with artificial invert sugar?
(a) Benzoin (b) Honey
(c) Digitalis (d) Senna

(iv) Which of the following is an oleo gum resin containing drug?
(a) Acacia (b) Agar
(c) Asafoetida (d) Ginger

(v) _____ is a medication or compound designed to suppress or relieve coughing by disrupting the body's cough reflex. Also known as cough suppressants, they are primarily used to treat dry, irritating coughs.

(vi) *Bombyx*sp and *Antheraea*sp. are source of:
(a) Silk (b) Wool
(c) Cotton (d) Rayon

(vii) An Ayurvedic preparation remains stable for an indefinite period, contains no metallic lustre, and is produced through repeated calcination (Puta). Which Ayurvedic dosage form best fits this description?
(a) Lehya (b) Bhasma
(c) Asava (d) Arishta

(viii) Which of the following is an aromatic plant?
(a) Digitalis (b) Mentha
(c) Rauwolfia (d) Senna

(ix) Stephen DeFelice, MD, founder and chairman of the Foundation for Innovation in Medicine (FIM), first coined the term _____.
(a) Probiotic (b) Prebiotic
(c) PUFA (d) Nutraceuticals

(x) Churna is a liquid herbal formulation. (True/False)

(xi) Lavender oil is a fixed oil obtained by expression from the seeds of *Prunus dulcis* (Miller) E. A. Webb belongs to family Rosaceae. (True/False)

(xii) The goldbeater's skin test is a qualitative chemical test used to detect the presence of true_____ .

(xiii) The word 'drug 'derived from old French word Drogue means____ .

(xiv) Drugs derived from plants or animals' part but do not represent any cellular part or organ of plant or animal is ___ drug.
(a) Crude (b) Organized
(c) Ionized (d) Unorganized

(xv) Define Total ash value.

(xvi) Molecular formula of isoprene unit _____ .
(a) C5H8 (b) C5H9
(c) C6H12 (d) C3H6

P.T.O

(xvii) Digoxin is present in *Digitalis purpurea.* (True/False)

(xviii) Threads or fibres used to tie a blood vessel to stop bleeding without the use of a needle are called:
(a) Bandage (b) Ligature
(c) Suture (d) Catgut

(xix) An Ayurvedic physician prescribes Swedana followed by Virechana to eliminate accumulated toxins. This treatment belongs to:
(a) Rasayana therapy (b) Panchakarma
(c) Kayachikitsa (d) Vajikarana

(xx) Which of the following helps improve the export quality of medicinal plants?
(a) Adulteration (b) Standardisation
(c) Improper storage (d) Incorrect identification

2. Answer the following (*any ten*): 10×3=30

(i) What are exogenous and endogenous antioxidants? Explain with suitable examples.

(ii) Discuss the importance of standardization in herbal formulations.

(iii) Mention the biological source, chemical constituent and cosmeceutical significances of any 2 of the following:
(a) Aloe gel, (b) lavender oil, (c) rosemary oil

(iv) What is Murexide test?

(v) Mention the contribution of any 2 of the following in history of drug discovery:
(a) Messrs. Pierre-Joseph Pelletier and Joseph-Bienaimé Caventou, (b) Friedrich Wilhelm Adam Sertürner, (c) Tu Youyou.

(vi) Explain chemotaxonomy with example.

(vii) Classify adulteration of crude drugs with suitable examples.

(viii) Compare leaf and leaflet.

(ix) Classify terpenoids with examples.

(x) Compare Antiseptics and disinfectants.

(xi) What is Absorbable suture? Give examples.

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Sadhanadi (Belgram), Kh...

Group-B

3. Answer the following (*any six*): 6×5=30

(i) Explain the method of preparation and examples of any two of the following:
(a) Gutika, (b) churna, (c) taila, (d) asava, (e) arishta.

(ii) List the biological source, chemical constituent and nutraceutical benefits of the following: (a) Spirulina, (b) soya, (c) garlic

(iii) Define Herbal Cosmetics. List the significances of herbal cosmetics.

(iv) Explain morphological system of classification with proper examples.

(v) Explain the process of organoleptic evaluation of Leaf or bark based crude drugs.

(vi) Mention the biological source, chemical constituents and therapeutic use of any 2 of the following:
(a) Hyoscyamus, (b) Belladonna, (c) Ephedra, (d) Opium, (e) Tea leaves, (f) Coffee seeds, (g) Cocoa, (h) Ispaghula, (i) Senna, (j) Rauwolfia, (k) Coriander, (l) Fennel.

(vii) Define alkaloids. Classify it chemically. List chemical properties and therapeutic significance of alkaloids.

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STATE MEDICAL FACULTY OF WEST BENGAL
DIPLOMA IN PHARMACY PART-I EXAMINATION
SEPTEMBER - 2026

HUMAN ANATOMY & PHYSIOLOGY
[E.R. 20-14T]

Time Allowed - 3 Hours *Full Marks - 80*

Use Separate Answer Script For Each Group.

Group-A

1. Answer all questions: 20×1=20

(i) The basic structural and functional unit of the human body is:
(a) Tissue (b) Cell
(c) Organ (d) System

(ii) The normal resting heart rate of an adult is approximately:
(a) 20–30/min (b) 40–50/min
(c) 60–100/min (d) 120–150/min

(iii) The largest artery in the human body is the:
(a) Pulmonary artery (b) Aorta
(c) Carotid artery (d) Femoral artery

(iv) The functional unit of the kidney is called the _____.

(v) The exchange of gases in the lungs mainly occurs in the _____.

(vi) The normal number of chromosomes in a human somatic cell is:
(a) 23 (b) 44
(c) 46 (d) 48

(vii) The largest part of the human brain is the:
(a) Cerebellum (b) Cerebrum
(c) Medulla oblongata (d) Pons

(viii) The pigment present in red blood cells that transports oxygen is _____.

(ix) The normal pH of arterial blood is approximately:
(a) 5.5 (b) 6.8
(c) 7.4 (d) 8.5

(x) The left ventricle pumps oxygenated blood into the systemic circulation. (True / False)

(xi) The cerebellum is mainly concerned with balance and coordination of movements. (True / False)

(xii) Platelets play an important role in blood clotting. (True / False)

(xiii) The process by which food is broken down into simpler substances is called _____.

(xiv) The thyroid gland primarily secretes:
(a) Insulin (b) Thyroxine
(c) Cortisol (d) ADH

(xv) The smallest blood vessels are called _____.

(xvi) The bone forming the forehead is the:
(a) Frontal bone (b) Parietal bone
(c) Temporal bone (d) Occipital bone

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Sadhandi (Belgram), Khanda

P.T.O.

(xvii) The involuntary muscle present in the heart is called _____ muscle.

(xviii) The female reproductive organ that produces ova is the:

(a) Uterus (b) Ovary

(c) Vagina (d) Cervix

(xix) The hormone responsible for milk production is:

(a) Oxytocin (b) Prolactin

(c) Estrogen (d) Progesterone

(xx) The spinal cord is protected by the:

(a) Skull (b) Vertebral column

(c) Sternum (d) Pelvic girdle

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2. Answer the following (*any ten*): 10x3=30

(i) Define anatomy and physiology. Mention any two branches of anatomy.

(ii) Describe the structure and functions of the plasma membrane.

(iii) Write a short note on blood and mention its major functions.

(iv) Describe the cardiac cycle briefly.

(v) Define blood pressure. State its normal value and mention the factors affecting it.

(vi) Explain the mechanism of respiration in brief.

(vii) Write down the different parts of human eye.

(viii) Write a short note on nephron and mention its major parts.

(ix) State the functions of the endocrine glands with suitable examples.

(x) Define reflex action and explain the reflex arc.

(xi) Write different lungs volume and capacities.

Group-B

3. Answer the following (*any six*): 6×5=30

(i) Describe the anatomy of the human heart with a neat labelled diagram. Explain the circulation of blood through the heart.

(ii) Describe the anatomy and physiology of the respiratory system. Explain the mechanism of inspiration and expiration.

(iii) Describe the structure of the nephron with a neat labelled diagram and explain the process of urine formation.

(iv) Describe the central nervous system, including the major parts of the brain and their functions.

(v) Explain the anatomy and physiology of the digestive system and describe the process of digestion and absorption.

(vi) Describe the male and female reproductive systems and briefly explain their major functions.

(vii) Describe the endocrine glands of the human body and explain the functions of the major hormones secreted by them.

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STATE MEDICAL FACULTY OF WEST BENGAL
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SEPTEMBER - 2026

SOCIAL PHARMACY
[E.R. 20-15T]

Time Allowed – 3 Hours *Full Marks – 80*

Use Separate Answer Script For Each Group.

Group-A

1. Answer all questions: **20×1=20**

(i) First National health Policy(NHP) was declared by the Government of Indian in the year:
(a) 1968 (b) 1983
(c) 1985 (d) 1989

(ii) PHC stands for:
(a) Primary Health Centres (b) Public Health Centres
(c) Primary Human Centres (d) All of these

(iii) BCG Vaccine prevent from which diseases?
(a) Typhoid (b) Tetanus
(c) Tuberculosis (d) Cancer

(iv) An Example of non-communicable disease is:
(a) Cancer (b) Tuberculosis
(c) Syphilis (d) Gonorrhoea

(v) Which of the following is a morbidity indicator?
(a) Child death rate (b) Case fatality rate
(c)Life Expactancy (d) Incidence

(vi) VDRL test is associated with:
(a) Syphilis (b) HIV
(c) Gonorrhoea (d) Hepatitis B

(vii) Tuberculosis is diagnosed by:
(a) Widal test (b) ELISA test
(c) VDRL test (d) Mantoux test

(viii) Water borne disease is:
(a) Measles (b) Tuberculosis
(c) Influenza (d) Cholera

(ix) Malaria is caused by:
(a) *Plasmodium vivax* (b) *Mycobacterium tuberculosis*
(c) *Bordetella pertusis* (d) All of these

(x) Chemical name of Vit D2 is _____.

(xi) Xeropthalmia is a deficiency of Vitamin _____.

(xii) Which vitamin is responsible for blood clotting?

(xiii) Ferritin is a _____ protein.

(xiv) Pellagra is a deficiency of Vitamin_____.

(xv) Write the full form of SARS.

(xvi) The study of Human population is _____.

(xvii) What is the incubation period for chicken pox?

(xviii) Give one example of acid-fast bacteria?

(xix) Which vaccine is recommended for mumps?

(xx) *Mycobacterium Tuberculosis* is a gram-positive bacterium(True/False)

P.T.O

2. Answer the following (*any ten*): **10x3=30**

(i) Write the role of pharmacist in public health.
(ii) Classify immunity with example.
(iii) Explain different types of vaccine with example.
(iv) Write short note on balanced diet with benefits.
(v) Describe essential amino acid with examples.
(vi) Write short note on 'Junk food and its health impact'.
(vii) What is Vitamin? Explain Megaloblastic anemia and Pernicious anemia.
(viii) Write in short 'Dietary supplements'.
(ix) Write in short demographic cycle.
(x) Write short note on epidemiology with applications.
(xi) How acid fast micro-organisms are detected?

Group-B

3. Answer the following (*any six*): **6x5=30**

(i) What are determinants of health? Describe Twelve (12) important health determinants.
(ii) What is Pharmacoeconomics? Write the Importance of Pharmacoeconomics in Healthcare.
(iii) What is Family Planning? Write objectives and devices of family planning.
(iv) What is a genetically modified food (GMF)? Explain genetically modified foods with example.
(v) Describe the epidemiology, mode of transmission and prevention of dengue.
(vi) Discuss causative agent, epidemiology, mode of transmission and prevention of Measles.
(vii) Write in short (**any two**):
(a) Morbidity Indicator (b) Food Fortification (c) Health Insurance

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