

Q.P. Code :07530

[Time: Three Hours]

[Marks:80]

Please check whether you have got the right question paper.

- N.B:
1. All questions are compulsory.
 2. Figures to the right indicate full marks.
 3. Draw neat, labeled diagrams wherever necessary.

- Q.1 a) Answer the following:- 16
- i) Justify- Cartilage as a connective tissue
 - ii) Justify- Plasma membrane is semi-permeable membrane
 - iii) Justify- Thymus as a primary lymphatic organ.
 - iv) Justify- blood O is universal donor.
 - v) Define: transudate, exudates
 - vi) Define: contractility and excitability of muscle Tissue
 - vii) Define homeostasis
 - viii) Enlist any four components of second line defense of non-specific immunity.
- b) Answer the following:- 04
- i) Define- interstitial fluid
 - ii) Enlist any two conditions in which High Count of Neutrophils is seen.
 - iii) _____ type of muscle is voluntary and striated.
 - iv) Enlist the types of cell junctions.
- Q.2 a) Answer any Two of the following 08
- i) Write short notes on Lifecycle of RBC
 - ii) Describe the process of Thrombopoiesis and Platelet plug formation.
 - iii) Explain principle of blood grouping in detail.
- b) Write a short note on Any TWO of the following 04
- i) Polycythemia and thrombocytopenia
 - ii) Sickle cell anemia and pernicious anemia
- Q.3 a) Answer Any TWO of the following 08
- i) Give detailed account of muscle proteins
 - ii) Explain microscopic anatomy of skeletal muscle.
 - iii) With the help of a neat, labeled diagrams explain anatomy and physiology of smooth muscle
- b) Answer Any ONE of the following 04
- i) Describe sliding filament mechanism of skeletal muscle contraction
 - ii) With the help of a neat, labeled diagram explain Neuromuscular Junction in detail.
- Q.4 a) Answer the following 08
- i) Draw a neat, labeled diagram of Lymph node.
 - ii) Describe the organization of lymphatic vessels and explain the formation and flow of lymph

- b) Write a short note on **ONE** of the following 04
- i) Describe Salient features of epithelial tissue and give detail classification
 - ii) Describe the various fibers and their role in connective tissue and enlist the cells of connective tissue.

- Q.5 a) Answer **Any ONE** of the following: 04
- i) Draw a neat, labeled diagram of plasma membrane.
 - ii) Explain the principle and factors affecting diffusion.

- b) Answer **Any ONE** of the following 04
- i) Describe muscle metabolism in detail
 - ii) Write a note on Excitation – contraction coupling

- c) Answer **Any ONE** of the following 04
- i) Describe the mechanisms involved in vasodilatation in inflammation.
 - ii) Write a short note on chemical mediators of acute inflammation.

- Q.6 a) Answer **Any TWO** of the following 08
- i) Write a short note on cell mediated immunity
 - ii) Explain the process of blood coagulation in detail
 - iii) Describe the process of phagocytosis in detail

- b) Answer **Any ONE** of the following 04
- i) Describe the outcomes/fate of acute inflammation
 - ii) Describe role of different cells in chronic inflammation.

Date : 26/4/18

Q.P. Code :02886

[Time: 3 Hours]

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[Marks:80]

Please check whether you have got the right question paper.

N.B: 1. All questions are compulsory.

Patil

- Q.1
- A. Draw the structure of Fructose by using Fischer projection formula 1
 - B. Draw the structure of D-Arabinose by using Haworth projection formula 1
 - C. Give name of an aromatic amino acid 1
 - D. Explain anabolism with example 1
 - E. Enlist water soluble vitamins 1
 - F. Define Mutarotation 1
 - G. Name and write the structure of coenzyme form of Vitamin-B₆ 1
 - H. Define annealing for nucleic acids 1
 - I. Write the structure of sucrose 1
 - J. Draw the structure of Lecithin 1
 - K. Draw the structure of GTP 1
 - L. Deficiency of Vitamin-C leads to 1
 - M. Give name and draw the structure of acidic amino acids with three letter code 2
 - N. Differentiate reducing and non-reducing sugar 2
 - O. Explain the primary structure of proteins 2
 - P. Explain Rancidity 2
- Q.2
- A. Explain the α -Helix structure of proteins 3
 - B. Explain ATP as energy carrier 3
 - C. Discuss the biochemical role of Vitamin-B₉ 3
 - D. Note on nucleoside 2
 - E. Enumerate silent features of digestion of carbohydrates 1
- Q.3
- A. Write a note on starch 3
 - B. Write a note on biochemical role of Vitamin-A or Vitamin-D 3
 - C. Differentiate DNA and RNA 3
 - D. Explain concept of standard free energy and transformed free Energy 2
 - E. Write the role of Liver in digestion of food 1
- Q.4
- A. Classify amino acids based on functional group with examples (No structures required) 3
 - B. Write a note on glycolipid or phospholipids 3
 - C. Discuss the biochemical role of riboflavin or nicotinamide 3
 - D. Write a note on Inositol 2
 - E. Explain thermodynamically unfavorable reaction 1

TURN OVER


- Q.5
- A. Write a note on polysaccharides 3
 - B. Write a note on folic acid or thiamine 3
 - C. Write a note on Ascorbic acid or Biotin 3
 - D. Draw structure of Phospholipids 2
 - E. Write salient features of lipid digestion 1
- Q.6
- A. Write a note on Triglycerol 3
 - B. Write a short note on Vitamin-K or Vitamin-E 3
 - C. Differentiate between DNA and RNA *Explain whatson - crick model* 3
 - D. Explain laws of thermodynamics 2
 - E. Explain nucleotide with example of it 1
- Watson & crick model*
DT: D

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Correction in Program code: 19631 - P.Y.B. Pharm. (Sem-I) (Choice Base) / T2512 - Biochemistry-I (I.P. Code: 02080)

Read As:

Q.6)A) Write a note on triglycerides.

University of Mumbai
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4:53 PM

Q.6) A) Write a note on triglycerides. Explain what some of the guide needed

(3 Hours)

Total Marks: 80

- N.B.:** 1) All questions are compulsory
 2) Answer all sub questions together
 3) Figures to right indicate full marks

- Q.1 (a) Explain the terms (Any 5) 5**
 i) Catalyst ii) Quantum number
 iii) Physiological buffers iv) Expectorants
 v) Rate constant vi) Chelating agents

- b) Answer the following (Any 5) 10**
 i) Draw Lewis structure for PCl_5 and state hybridization of central atom
 ii) Give one example sclerosing agent and its use
 iii) Define: Systemic antacid. Mention any two disadvantages
 iv) Explain role of copper as essential and trace element
 v) Draw an energy profile diagram for two step reaction and indicate an intermediate and a rate determining step
 vi) Classify: calcium gluconate, magnesium trisilicate, sodium chloride, sodium acetate

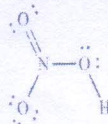
b) Match the following 5

Column A	Column B
i) EDTA	Calamine
ii) Cr-51	Chelating agent
iii) Aluminum chloride	Planar geometry
iv) BF_3	Survival time for RBCs
v) Zinc carbonate	Electrophilic catalyst

- Q.2 a) ' Isotope effect is maximum for hydrogen', Explain the statement and give applications for it 4**
b) Answer the following (Any 2) 4
 i) Discuss protein precipitant as antimicrobial agents
 ii) When are the emetic agents required? Explain their mechanism of action briefly and give one example.
 iii) Explain why talc is a protective topical agent?
c) Add a note on applications of radioactive iodine preparations 2
d) Elaborate physiological role of sodium ion 2

- Q.3 a) i) Explain Electrophilic catalysis in brief 2**
 ii) Discuss how phase transfer catalysis takes place in the reaction mixture? 2

- b) i) Justify use of Dilute Hydrochloric acid for treatment 2
 ii) State significance and examples of combinations antacids 2
 c) Give ground state electronic configurations: Sodium, Sulphur 2
 d) Calculate the formal charge on nitrogen and double bonded oxygen 2



Q.4 a) Complete the following table on the basis of hybridization concept 4

Molecule	Hybridization state of the underlined atom	Bond angle
<u>Si</u> Cl ₄		
H ₂ <u>O</u>		
<u>B</u> F ₃		
<u>C</u> in Ethylene		

- b) Elaborate on mechanism of actions for antimicrobials and uses of hydrogen peroxide 4
 c) State and explain reactivity-selectivity principle 2
 d) State an example of a reaction giving kinetically controlled product and thermodynamically controlled product and justify 2

Q.5a) State true or false 4

- i) dxy, dyz and dzx orbitals have pi symmetry
 ii) Electron affinity is same as electronegativity for any element
 iii) Dipole moment for NH₃ is less than NF₃
 iv) Bond angle for CH₄ is 90° by hybridization theory
 b) What is a general base? Derive an expression for general base catalysis 4
 c) Discuss use of sodium nitrite and sodium thiosulphate in cyanide poisoning 2
 d) Write a note on electrolytes used in replacement therapy 2

Q.6 Answer the following (Any 6) 12

- i) State rate law and molecularity for the reaction : $H_2 + Cl_2 \rightarrow 2HCl$
 ii) Give uses of radioactive Co-57 and Co-60
 iii) How Hammond's postulate is related to reactivity-selectivity principle ?
 iv) What is the weight of NaCl needed to prepare a liter of solution containing 9 mEq Na⁺/l
 v) Explain the role of iron as essential and trace elements
 vi) Write a note on biological effects of radiations
 vii) Give any two examples of protective and adsorbents and explain their use

[Time: - 3 Hours]

[Marks: 80]

N.B: 1. All questions are compulsory
2. Figures to the right indicate full marks

- Q.1.a Classify dosage forms (2)
Q.1.b Define i) Compounding and ii) Dispensing (2)
Q.1.c Write in brief about dispensing of proprietary medicines (2)
Q.1.d What should be the concentration of a stock solution of sodium chloride if dilution of 250 ml of the concentrated solution on dilution up to 2 litres with distilled water yields a 1:6000 solution. (2)
Q.1.e Explain any 2 tests to differentiate between o/w and w/o emulsion (2)
Q.1.f Define gels. Give any TWO examples of gelling agents. (2)
Q.1.g Discuss the manufacturing of pills. (2)
Q.1.h Give any one example of physical incompatibility. How would you overcome the same? (2)
-
- Q.1.i Define pharmaceutical care and enlist its principles (2)
Q.1.j Enumerate the benefits and risks involved in the use of OTC medicines. (2)
- Q.2.a Classify routes of administration. Differentiate between oral and parenteral routes. (4)
Q.2.b Highlight the container-closure system and labelling directions for (any TWO) (4)
i) Suspension ii) Ointment iii) Lozenge
Q.2.c Enlist the various methods for formulating an emulsion. Explain any TWO in detail. (4)
- Q.3.a Define a prescription. Explain its various parts in detail (4)
Q.3.b Give the details of various ointment bases used (4)
OR
Describe in detail the procedure to compound and dispense suppositories made using cocoa butter as the base (4)
Q.3.c Write a note on effervescent granules (4)
- Q.4.a How would you formulate a suspension containing an indiffusible solid (4)
OR
Classify solutions. Describe in brief any TWO solutions meant for external application. (4)
Q.4.b Comment on the following prescription (4)
Rx
Calciferol solution 0.15 ml
Glycerine 0.3 ml
Water q.s. 1 ml
Send 50 ml for a 3 year old child
Label : 5 ml to be taken daily with meals
Q.4.c Discuss the responsibilities of a community pharmacist in the modern healthcare scenario (4)
- Q.5.a Define "health" as per WHO. Give the significance and methods used for health screening. (4)
Q.5.b Discuss the steps involved in patient counselling. (4)

Q.5.c Paraphrase the code of ethics for a pharmacist in relation to his job as laid down by the Pharmacy Council of India. (4)

Q.6.a How many grams of ointments containing 30% w/w zinc oxide, 15% w/w zinc oxide and simple ointment should be mixed to produce 500 grams of ointment containing 20% w/w zinc oxide? (4)

Q.6.b Comment on the following prescription (4)

Rx

Hyoscine hydrobromide 100 µg

Lactose qs

Send 5 sachets weighing 120 mg each.

Label: One powder to be taken 30 mins prior to journey

Q.6.c i) Give the causative agents for the following diseases: (2)

i) Whooping cough

ii) Cholera

iii) Tetanus

iv) AIDS

ii) What is a balanced diet? Give its significance. (2)
