



ANJUMAN-ISLAM'S

AIKTC KALSEKAR TECHNICAL CAMPUS

INNOVATIVE TEACHING · EXUBERANT LEARNING

School of Architecture

School of Engineering & Technology

School of Pharmacy

Knowledge Resource & Relay Centre (KRRC)

AIKTC/KRRC/SoP/ACKN/QUES/2016-17/

Date: 2/1/17

School: SoP-CBCS

Branch: SoP

SEM: I

To,
Exam Controller,
AIKTC, New Panvel.

Dear Sir/Madam,

Received with thanks the following [✓]Semester/Periodic question papers from your exam cell:

Sr. No.	Subject Name	Subject Code	Format		No. of Copies
			SC	HC	
1	General Chemistry	BPH_C_101_T	✓	✓	
2	Dispensing and Community Pharmacy	BPH_C_102_T	✓	✓	
3	APP - I	BPH_C_103_T	✓	✓	
4	Biochemistry - I	BPH_C_104_T	✓	✓	
5	Communication Skills and Ethics (NUES)	BPH_C_105_T	—	—	

Note: SC – Softcopy, HC - Hardcopy

(Shaheen Ansari)
Librarian, AIKTC

B. Pharm, Sem-I (CBCS)
Sub - GC

08/12/16

Dec 2016

QP CODE : 773501

(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) Formal charge
- ii) Rate law
- iii) Astringent
- iv) Mechanical antidote
- v) Radioactivity
- vi) Buffer capacity

b) Answer the following (Any 5)

10

- i) Draw Lewis structure for ozone (O_3) and $AlCl_3$.
- ii) Discuss the importance of Copper as essential and trace ion.
- iii) Arrange the following compound in increasing order of ionic character.
Na-Cl, K-Br, H-Cl and H-Br
- iv) Give ground state electronic configuration of Sodium and Argon.
- v) What are expectorants? How do they act?
- vi) Explain phase transfer catalysis with suitable example.

b) Match the following

5

Column A

Column B

- | | |
|--------------------------|--|
| i) Kaolin | a) Isapgol |
| ii) Bulk purgative | b) Potassium |
| iii) Antiflatulent | c) Purified native hydrated Aluminium silicate |
| iv) Extracellular Cation | d) Simethicone |
| v) Hypokalemia | e) Sodium |

Q.2 a) What is Kinetic isotope effect? Discuss primary isotope effect on kinetics of a reaction with suitable example.

4

b) Answer the following (Any 2)

4

- i) Write a note on sclerosing agent.
- ii) Write the uses of Titanium dioxide and hydrogen peroxide.
- iii) What are antioxidants? Explain with suitable example.
- c) Discuss the properties of α -particle.
- d) Enlist major intracellular ions and explain the physiological role of Calcium.

2

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{TURN OVER

- Q.3**
- a) Enlist types of catalysis and explain electrophilic catalysis with suitable example. 4
- b) What are the ideal properties of antacid? What are the side effects of antacid therapy and how can you overcome the side effects? 4
- c) Give the significance of Principal quantum number & magnetic quantum number. 2
- d) Draw Lewis structure and calculate the formal charge on underlined atom (Any 1) 2
- i) $\underline{\text{S}}\text{O}_4^{-2}$ ii) $\text{H}_2\underline{\text{C}}\text{O}_3$

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

Molecule	Hybridized state of underlined atom	Bond angle
$\text{H}_2\underline{\text{S}}$		
$\underline{\text{S}}\text{F}_6$		
$\text{CH}_2=\underline{\text{C}}\text{H}_2$		
$\underline{\text{N}}\text{F}_3$		

- b) What are topical agents? Classify with suitable example and give the mechanism of action and uses of potassium permanganate. 4
- c) State and explain the Curtin-Hammet principle. 2
- d) Draw the reaction coordinate diagram for one step endothermic and two step exothermic reaction. 2

- Q.5** a) State true or false and justify (Any 4) 4
- i) CCl_4 has zero molecular dipole moment.
- ii) The order of electronegativity of hybridized Carbon is $sp > sp^2 > sp^3$.
- iii) Increasing 's' character increases bond angle.
- iv) Group electronegativity of alkenyl is greater than that of an alkynyl group.
- v) CH_3Br and CH_3F have same dipole moments.
- b) Write a note on general acid catalysis. Explain correlation graphs for reaction rates with acidity function. 4
- c) Write a note on cyanide poisoning and its treatment. 2
- d) What will be the milliequivalence of sodium in the solution containing 9g/L of sodium chloride? 2

- Q.6** Answer the following (Any 6) 12
- i) The decomposition of drug in acidic solution was found to follow first order. The initial concentration was found to be 0.070 moles/L. Calculate the concentration of drug after 12 hrs. (Rate constant: 0.035 hr^{-1})
- ii) Define units of measurement of radioactivity for absorbed and exposure dose.
- iii) Write a note on electrolyte replacement therapy.
- iv) Addition of HBr to 1,3-butadiene gives 1,2-addition product at lower temperature and 1,4-addition product at higher temperature. Explain underlying principle.
- v) Discuss the role of sulfur as essential and trace element.
- vi) Give any four clinical application of Tc-99.
- vii) Define half-life of radiopharmaceutical and calculate the half-life of a sodium phosphate P-32 solution having disintegration constant 0.0488 days^{-1} .

(3 Hours)

Total Marks : 80

All questions are compulsory

Figures to the right indicate full marks

- Q.1.a Classify dosage forms based on their physical state (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 Using Dilling's rule calculate the dose for a 8 year old patient if the adult dose of the same drug is 500 mg. (2)
- Q.1.e Enlist the properties of an ideal suspension (2)
- Q.1.f Enlist the advantages and disadvantages of capsule as a dosage form (2)
- Q.1.g Enumerate the disadvantages of pills (2)
- Q.1.h Give any one example of chemical incompatibility. How would you overcome the same? (2)
- Q.1.i Enlist the principles of pharmaceutical care (2)
- Q.1.j Discuss OTC medicines in brief (2)
- Q.2.a Enlist the various routes of administration. Differentiate between oral and parenteral routes. (4)
- Q.2.b Highlight the storage conditions and labelling directions for (any TWO) (4)
i) emulsion ii) suppository iii) lozenge
- Q.2.c What are creams? Include a note on soap creams. (4)
- Q.3.a Draw an imaginary prescription and labels its parts. Explain the various parts in detail (4)
- Q.3.b Classify ointment bases. Describe any ONE base in detail (4)
OR
Describe in detail the disadvantages offered by cocoa butter as a suppository base
- Q.3.c Discuss compounding and dispensing of effervescent granules in detail (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 oral use
- Q.4.b Comment on the following prescription (4)
Rx
Hyoscine hydrobromide 200 µg
Lactose qs
Send 4 divided powders.
Label: One powder to be taken 30 mins prior to journey
- Q.4.c Discuss the responsibilities of a community pharmacist. (4)
- Q.5.a Define "health" as per WHO. discuss the areas in which a pharmacist can get involved to promote health of a community (4)
- Q.5.b What is patient counselling? Give its significance. Describe in brief 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)

{TURN OVER

Q.6.a The required HLB of the oil phase of an emulsion is 11.5. What amount of Span 80 (HLB 4.3) and Tween 80 (HLB 15) should be used such that the total of the 2 emulgents is 200 grams (4)

OR
In what proportions should ointments containing 25% w/w sulphur, 15% w/w sulphur and simple ointment be mixed to produce an ointment containing 20% w/w sulphur (4)

Q.6.b Comment on the following prescription

Rx
Calciferol solution 0.25 ml
Glycerine. 0.3 ml
Water qs. 5 ml

Send 50 ml for a 2 years old patient

Label: One teaspoonful to be given daily

Q.6.c Describe the importance of health screening. Give the causative agents for the following diseases:

- i) Malaria
- ii) Tuberculosis
- iii) Leprosy
- iv) Plague

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B. Pharm, sem-I (CBCS)
Sub-APP-I

17/11/2016

QP Code : 773700

(3 Hours)

[Total Marks : 80

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

1. (a) Answer the following :- 16
- (i) Justify bone as a connective tissue.
 - (ii) Enlist the functions of plasma membrane.
 - (iii) Give functions of lymphatic system.
 - (iv) Explain how biconcave shape of RBCs help in Oxygen transport.
 - (v) Enlist the stimuli for acute inflammation.
 - (vi) Give features and location of cardiac muscle.
 - (vii) Describe positive feedback system.
 - (viii) Justify skin as a component of innate immunity.
- (b) (i) Excessive loss of RBCs from large wounds leads to _____ 4
anemia.
- (ii) Enlist the basic life processes.
 - (iii) Describe the role of fibrinogen.
 - (iv) _____ type of muscle is non-striated & involuntary.
2. (a) Answer any **two** of the following :- 8
- (i) Describe the process of hemoglobin synthesis.
 - (ii) Describe the blood coagulation pathways.
 - (iii) Classify leukocytes. Give detail account of Neutrophils.
- (b) Write a short note on any **one** of the following :- 4
- (i) Anemia
 - (ii) Hemolytic disease of Newborn (HDN)
3. (a) Answer any **two** of the following :- 8
- (i) Describe sarcomere with a neat, labelled diagram.
 - (ii) Describe the events of sliding filament mechanism involved in skeletal muscle contraction.
 - (iii) Explain the sources of energy in skeletal muscle.

[TURN OVER

- (b) Write a short note on any **one** of the following :- 4
- (i) Give detail account of muscle proteins.
 - (ii) With the help of neat, labelled diagram explain anatomy of smooth muscle.
4. (a) Answer any **one** of the following :- 4
- (i) Draw a neat, labelled diagram of thymus.
 - (ii) Explain how lymphatic organs are classified. Give detail account of primary lymphatic organs.
- (b) Write a short note on any **one** of the following :- 4
- (i) Myasthenia Gravis
 - (ii) AIDS
- (c) Answer any **one** of the following :- 4
- (i) Write a short note on Extra Cellular Matrix (ECM).
 - (ii) Draw a neat, labelled diagram of Neuron and discuss the general functions of nervous tissue.
5. (a) Answer any **one** of the following :- 4
- (i) Write a short note on active transport mechanism with suitable example.
 - (ii) Give detail account of structure of plasma membrane.
- (b) Answer any **one** of the following :- 4
- (i) Compare and contrast isotonic and isometric contractions.
 - (ii) Discuss Neuromuscular junction with the help of a neat, labelled diagram.
- (c) Answer any **one** of the following :- 4
- (i) Compare and contrast acute and chronic inflammation.
 - (ii) Describe the process of angiogenesis.
6. (a) Answer any **two** of the following :- 8
- (i) Distinguish between innate and adaptive immunity.
 - (ii) Discuss the process of erythropoiesis in detail.
 - (iii) Explain the role of T-cells, B-cells and MHC in immunity.
- (b) Answer any **one** of the following :- 4
- (i) Explain the role of any **two** of the following in inflammation:-
 - (a) Histamine
 - (b) Bradykinin
 - (c) Prostaglandin
 - (ii) Discuss the process of chemotaxis.

B. Pharm, Sem - I (CBCS)
sub - Biochemistry - I

19/12/2016
Dec 2016

QP Code: 773800

(3 hours)

Total Marks: 80

N.B.: All questions are compulsory

- Q. 1 a) Draw structure of α -D-Fructose by fischer projection Formula. 1
- b) Draw of C₂ epimer of Glucose 1
- c) Draw structure of arabinose by Haworth projection formula. 1
- d) Explain inversion of Sugar 1
- e) Define catabolism with example 1
- f) Draw structure of Sphingomyelin 1
- g) Name active Form of Vitamin-B₃ 1
- h) Vitamin -A deficiency causes ----- 1
- i) Define rancidity 1
- j) Classification of Amino acid based on nutritional requirement 1
- k) Define Vitamin and enlist water soluble vitamins 2
- l) Draw structure of any two sulfur containing amino acids with one letter code 2
- m) Explain quaternary structure of protein 2
- n) Explain non reducing sugar and draw one structure of non reducing disaccharides 2
- o) Differentiate nucleoside with example 2
- Q.2 a) Write a note on β - Plated secondary structure of protein 3
- b) Explain FADH₂ as Energy carrier 3
- c) Write note on Vitamin- B₂ or Vitamin- B₆ 3
- d) Explain melting and annealing of DNA 2
- e) Give role of liver in digestion and absorption of food 1
- Q.3 a) Write a note on Starch 3
- b) Write a note on Vitamin-D or Vitamin-K 3
- c) Explain in detail Watson and Crick model of DNA 3
- c) Explain concept of free energy and transformed free energy 2
- d) Give role of kidney or muscles in digestion and absorption of food 1

[Turn Over

- Q.4 a) Classify amino acid based on their structure with example of each class (one structure from each class) 3
- b) Write a note on Triacylglycerol 3
- c) Discuss biological role of Vitamin-B₃ or Vitamin- B₁ 2
- d) Explain Thermodynamically Favorable reactions 2
- d) Justify "Oxidation as Source of Energy in Biological System" 2
- Q.5 a) Write a note on monosaccharide 3
- b) Write a note on folic acid or ascorbic acid 3
- c) Write note on Thiamine 3
- d) Write a note on inositol 2
- c) Explain first laws of thermodynamics 1
- Q.6 a) Write note on Phospholipids 3
- b) Write a note on Vitamin-B₇ or Vitamin- B₉ 3
- c) Differentiate between DNA and RNA 3
- d) Write note on Glycolipids 2
- e) Draw Structure of ATP 1
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