



AIKTC KALSEKAR TECHNICAL CAMPUS

ESTABLISHED IN 1978, SURVEGARH, TELANGANA

School of Architecture

School of Engineering & Technology

School of Pharmacy

Knowledge Resource & Relay Centre (KRRC)

AIKTC/KRRC/SoP/ACKN/QUES/2018-19/

Date: _____

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:

✓ (A.T.K.T)

Sr. No.	Subject Name	Subject Code	Format		No. of Copies
			SC	HC	
1	General Chemistry	BPH_C_101_T		✓	02
2	Dispensing and Community Pharmacy	BPH_C_102_T		✓	02
3	APP - I	BPH_C_103_T		✓	02
4	Biochemistry - I	BPH_C_104_T		✓	02
5	Communication Skills and Ethics (NUES)	BPH_C_105_T			

Note: SC – Softcopy, HC - Hardcopy

(Shaheen Ansari)
Librarian, AIKTC

sem-I CBCS

Q. P. Code: 22581

(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) Radioactivity
 - ii) Antiseptic
 - iii) Hypocalcemia
 - iv) Half life
 - v) Principal Quantum Number
 - vi) Sclerosing agent

- b) Answer the following (Any 5) 10**
- i) What are physiological functions of zinc?
 - ii) Draw Lewis structure for PO_4^{3-} and HNO_2
 - iii) Give ground state electronic configuration of Neon and Potassium.
 - iv) Explain phase transfer catalysis in brief.
 - v) Enlist ionic composition of the body fluids and state the significance
 - vi) Arrange the following compounds in increasing order of s-character:
 $\text{CH}_4, \text{PCl}_5, \text{SF}_6, \text{BeF}_2$

- c) Match the following 5**
- | Column A | Column B |
|------------------------------|----------------------------------|
| i) HPO_4^{2-} | a) Rochelle salt |
| ii) Zinc oxide | b) Topical protective agent |
| iii) Roentgen | c) Principal intracellular anion |
| iv) NH_3 | d) Exposure dose |
| v) Sodium potassium tartrate | e) Triagonal pyramidal |

- Q.2 a) What is Kinetic isotope effect? Why kinetic isotopic studies are performed? How to express it, explain with suitable example? 4**
- b) Answer the following (Any 2) 4**
- i) Give the uses of Tale and potassium permanganate.
 - ii) What are expectorants? How do they act?
 - iii) Write a note on antioxidants?

c) Fill in the blank:

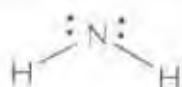
When ^{223}Rn emits α -----the atomic number decreases by ____ and atomic mass number decreases by ____ of resulting nuclei

2

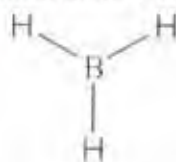
d) Define hyponatremia. What are its causes?

2

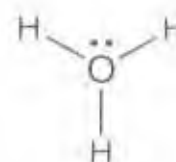
- Q.3 a) What is catalysis? Give its principle and elaborate on covalent catalysis 4
 b) Classify gastrointestinal agents. Elaborate on saline cathartic with suitable example. 4
 c) Define Inductive effect and electronic configuration. 2
 d) Calculate the formal charge on central atom (Any 2) 2



(i)



(ii)



(iii)

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

Molecule	Hybridized state of <u>underlined> atom</u>	Bond angle
<u>P</u> Cl ₅		
<u>C</u> H ₃ - <u>C</u> H ₃		
<u>Al</u> Cl ₃		
<u>S</u> F ₆		

- b) Classify and Give mechanism of action of following agents 4
 Zinc peroxide, Silver nitrate, Titanium dioxide, Povidone iodine
- c) State and explain the Curtin-Hammet principle. 2
- d) In the Sulphonation of naphthalene, identify which is a kinetically controlled and which is thermodynamically controlled product. 2

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- Q.5 a) State true or false. (Any 4)** **4**
- i) Electronegativity is related to ionization energy and electron affinity.
 - ii) Bond angle of BF_3 is 180° by hybridization theory.
 - iii) Red colour in electrostatic potential surface indicate electronegative region.
 - iv) $\text{H}_2\text{C}=\text{CHCl}$ behaves as nonpolar molecule
- b) Write a note on specific acid catalysis or general base catalysis.** **4**
- c) Define antidote. Classify them based on mechanism of action with suitable example.** **2**
- d) Define buffer capacity and buffer action. Enlist different physiological buffers that maintains physiological acid-base balance.** **2**
- Q.6 Answer the following (Any 6)** **12**
- i) Calculate rate constant and half-life for first order reaction, if 90% of substance reacted within 10 min.
 - ii) Write a note on electrolyte replacement therapy.
 - iii) Enlist biochemical functions of copper.
 - iv) Discuss the biological effect of radiation.
 - v) Give any four clinical application of I-131.
 - vi) The half-life of Zn-71 is 2.4 minutes. If a patient had 100 mg at the beginning, how many grams would be left over after 7.2 minutes has elapsed?
 - vii) Draw the reaction coordinate diagram for two step exothermic reaction and show which is a rate determining step
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25/04/19 Sem-I CBCS

[Time: - 3 Hours]

[Marks: 80]

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

- Q.1.a Explain the need for dosage forms (2)
- Q.1.b Give in general the compounding and dispensing procedure (2)
- Q.1.c Explain dispensing of proprietary medicines (2)
- Q.1.d Prepare 500ml of 20% alcohol from 95% alcohol. (2)
- Q.1.e State the storage conditions of cream with justification (2)
- Q.1.f Differentiate between pastes and ointments (2)
- Q.1.g Write a short note on lozenges (2)
- Q.1.h Enlist types of incompatibilities and explain insolubility as physical incompatibility (2)
- Q.1.i Define pharmaceutical care and give its major functions (2)
- Q.1.j "OTC medications are safe but not risk free" Explain the statement (2)
- Q.2.a Enlist the various routes of administration. Explain the oral route in detail. (4)
- Q.2.b Highlight the container-closure and labelling directions for (any TWO) (4)
i) Pastilles ii) Suppository iii) ointment
- Q.2.c Classify emulsifying agents and explain polysaccharides as emulsifying agents (4)
- Q.3.a Highlight on different types of prescriptions (4)
- Q.3.b. Describe in detail any two methods of preparation of suppository OR (4)
Write a short note on pastes
- Q.3.c Classify powders and explain powders for external use (4)
- Q.4.a How would you formulate a suspension containing an indiffusible solid OR (4)
Classify solutions. Describe in brief any TWO solutions for oral use
- Q.4.b Comment on the following prescription (4)
Rx
Arachis Oil 20ml
Double strength chloroform water 100ml
Water qs to 200ml
Make an emulsion – Send 50ml
Label: Three 5ml spoonful to be taken three times a day with meals.
- Q.4.c Elaborate on the role of community pharmacist in public healthcare system (4)
- Q.5.a Define Health promotion and discuss methods for health promotion in society (4)
- Q.5.b How does patient counselling impact therapeutic compliance (4)
- Q.5.c Write a note on the code of ethics followed by a community pharmacist (4)

- Q.6.a How would you prepare 75 g of 10% w/w salicylic acid ointment from ointments containing 5%, 12% and 20 % w/w salicylic acid
OR
How much (ml) of a 17%w/v concentration of Benzalkonium chloride should be used in preparing 300ml of stock solution such that 15ml diluted to 1 L will yield 1:5000 solution (4)
- Q.6.b Comment on the following prescription (4)
Rx
Chlordiazepoxide200µg
Lactose qs
Send 6 capsules each weighing 120mg
Label: one to be taken with draught of water
- Q.6.c i. Give the causative agent and prevention of Hepatitis and AIDS (2)
ii. Explain balanced diet with its significance (2)

sem - I CBCS

Q.P. Code: 25605

(3 HOURS)

[Total Marks: 80]

N.B.: 1) All questions are compulsory

2) **Figures** to the **right** indicate **full** marks

3) Draw neat, labelled diagrams wherever necessary.

Q 1 a) Answer the following

16

- i) Define negative feedback mechanism of homeostasis
- ii) What is pinocytosis
- iii) Give location and function of Hyaline cartilage
- iv) Enlist components of lymphatic system
- v) Name the antigen and antibody present in following blood group: a) A (b) O
- vi) Enlist cardinal signs of Inflammation
- vii) Explain how Graves' disease leads to hyperthyroidism
- viii) Write classification of muscles

b) Answer the following

04

- i) Give example of basic life processes
- ii) Deficiency of which nutrients cause megaloblastic anemia.
- iii) Name the factor involved in the pathogenesis of erythroblastosis fetalis?
- iv) What is isotonic contraction?

Q.2. a) Answer Any TWO of the following

08

- i) Define Hemostasis. Explain the process of Platelet Plug Formation.
- ii) Classify White Blood Cells (WBCs). Name the respective conditions in which Neutrophil and Eosinophil count increases
- iii) Describe the process of hemoglobin synthesis

b) Write a short note on Any ONE of the following

04

- i) Define Anemia and discuss different types of anemia
- ii) Thrombocytopenia and leucopenia.

Q.3. a) Answer Any TWO of the following

08

- i) Explain various sources of energy for muscle metabolism.
- ii) Describe in detail the mechanism of skeletal muscle contraction.
- iii) Describe microscopic anatomy of skeletal muscle.

b) Answer Any ONE of the following

04

- i) Explain Excitation - contraction coupling in skeletal muscle.
- ii) Draw a neat, labelled diagram showing organization of skeletal muscle

Q 4. a) Answer any ONE of the following

04

- i) Draw a neat labelled diagram of lymph node. Discuss functions of lymphatic system
- ii) Discuss anatomy and functions of spleen

Q.P. Code: 25605

b) Write a note on (any ONE) 04

- i) Myasthenia Gravis
- ii) Rheumatic fever

c) Answer any ONE of the following 04

- i) Classify connective tissue and give example and location of each type
- ii) Write a short note on Stratified Epithelium.

Q 5 a) Answer any ONE of the following 04

- i) Compare and contrast between the active and passive transport processes.
- ii) Explain the mechanism of pinocytosis in detail.

b) Answer any ONE of the following 04

- i) Draw a neat labelled diagram of the cardiac muscles. Give role of intercalated discs.
- ii) Explain the structure and function of neuromuscular junction.

c) Answer any ONE of the following 04

- i) Give significance of inflammation. Explain the role of histamine and Prostaglandins in inflammation.
- ii) Discuss the process of chemotaxis

Q 6 a) Answer any TWO of the following 08

- i) Describe the process of erythropoiesis.
- ii) Write a note on autoimmunity.
- iii) Write a note on hypersensitivity reactions.

b) Answer any ONE of the following 04

- i) Compare and contrast between Acute and Chronic inflammation
- ii) Discuss various vascular changes during inflammation.

02/05/19 Sem-I CBCS

(3 hours)

Total Marks: 80

N.B.: All questions are compulsory

Q. 1 a) Draw the structure of α -D glucose by using Haworth projection formula	1
b) Draw the structure of D-ribose by using Fischer projection formula	1
c) Give the name and three letter code of an amino acid containing aromatic ring	1
d) Explain anabolism with example	1
e) Enlist water soluble vitamins	1
f) Define isoelectric pH	1
g) Give the structure of coenzyme of Vitamin B ₆	1
h) Name the purine nitrogenous bases	1
i) Draw the structure of sucrose	1
j) Draw the structure of cephalin	1
k) Draw the structure of ADP	1
l) Deficiency of Vitamin-D leads to.....	1
m) Give the name and draw the structure of acidic amino acids	2
n) Differentiate between non reducing disaccharides and reducing disaccharides	2
o) Enlist essential amino acids	2
p) Explain the primary structure of proteins	2
Q. 2 a) Explain the β - plated secondary structure of proteins	3
b) Explain NADH as energy carrier	3
c) Discuss the biochemical role Vitamin-B ₂ or Vitamin-B ₁	3
d) Write a note on nucleoside and nucleotide	2
e) Enumerate salient features of digestion of fatty acid	1
Q. 3 a) Write a note on polysaccharides	3
b) Write a note on biochemical role of Vitamin- A or Vitamin -D	3
c) Explain Watson and crick model of DNA with diagram	3
d) Explain standard free energy and transformed free energy	2
e) Comment on conversion of glucose to energy in RBCs	1
Q. 4a) Classify amino acids based on functional group with examples (\rightarrow structures required)	3
b) Write a note on phospholipids	3
c) Discuss the biochemical role B ₉	3
d) Write a note on Vitamin-B ₃ or Vitamin -B ₁₂	2
e) State second law of thermodynamics	1
Q. 5 a) Write a note on polysaccharides	3
b) Write a note on Vitamin- B ₅ or Vitamin -B ₇	3
c) Write a note on Vitamin -C	3
d) Draw the structures of two monounsaturated fatty acid	2
e) Write salient features of protein digestion	1
Q. 6 a) Explain melting and annealing of DNA	3
b) Write a short note on Vitamin-K or Vitamin -E	3
c) Write a note on Triglycerides	2
d) Explain thermodynamically unfavorable reaction	2
e) Write a note on rancidity	2