QP Code : **13756**

(3 Hours)   [Total Marks :70

N.B. : (1) All Question are **compulsory**.
      (2) Figures to the **right** indicate **full** marks.
      (3) Draw a neat labelled diagram wherever necessary.

1. (a) Answer the following:—   12
     (i) Mention location and functions of columnar epithelial cells.
     (ii) Explain in brief process of pinocytosis.
     (iii) Comment on natural killer cells.
     (iv) What is polycythemia vera.
     (v) State any one tissue derived inflammatory mediator and their role in inflammation.
     (vi) Explain all or none principle of muscle contraction.
  (b) Define motor unit.   3
     (i) Define motor unit.
     (ii) name the phagocytic WBCS.
     (iii) Which is powerhouse of cell.

2. (a) Answer any **two** of the following:—   8
     (i) State various types of immunity with suitable example and explain role of B-lymphocytes.
     (ii) Explain structure and pathway of synthesis of hemoglobin.
     (iii) Discuss the composition of blood and role of each constituent present in it.
  (b) Write short notes on any **one**:—   3
     (i) Discuss the pathophysiology of megaloblastic anemia.
     (ii) Write a noe on leukemia.

3. (a) Answer any **two** of the following:—   8
     (i) Compare and contrast between cardiac muscle and skeletal muscle.
     (ii) Discuss various types of contractions of skeletal muscle.
     (iii) Explain the mechanisms of various systems involved in generation of energy during contraction of muscle.
  (b) Answer any **one** of the following:—   3
     (i) Explain role of acetylcholine in contraction of of skeletal muscle.
     (ii) Write a note on various properties of cardiac muscle.

4. (a) Answer any **one** of the following:—   4
     (i) Explain histology and functions of spleen.
     (ii) Draw a neat labelled diagram of lymph node showing its structural details.

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(b) Write short note on any **one**:—   4
   (i)   Write a note on rheumatic fever.
   (ii) Write a note on AIDS.

4. (c) Answer any **one** of the following:—   3
   (i)   Write a note on aereolar connective tissue.
   (ii) compare and contrast between endocrine and exocrine gland.

5. (a) Answer any **one** of the following:—   4
   (i)   Explain composition of plasma membrane along with neat labelled diagram.
   (ii) Write a note on carrier mediated transport of solutes across membrane.

 (b) Answer any **one** of the following:—   4
   (i)   Explain sliding filament theory of muscle contraction.
   (ii) Draw a neat labelled diagram of smooth muscle and discuss its physiology
         of contraction.

 (c) Answer any **one** of the following:—   3
   (i)   Discuss chemotaxis during inflammation.
   (ii) Explain various vascular changes during in flammation.

6. (a) Answer any **one** of the following:—   8
   (i)   Write a note on blood coagulation.
   (ii) Explain the structure and functions of platelets.
   (iii) Write a note on blood group & Erythroblostosis fetails.

 (b) Answer any **one** of the following:—   3
   (i)   Write a note on angiogenesis and fibrosis during inflammation.
   (ii) Discuss role of prostaglandins in inflammation.

_____

Anjuman-I-Islam's
Kalsekar Technical Campus
SCHOOL OF PHARMACY, NEW PANVEL
Semester I Exam: 2014-2015
Subject: Communication Skills

First Year B.Pharm   Total Marks: 70
Duration: 03 Hours
Instructions: Attempt **any five questions, Q.1 is compulsory, Marks to the right indicate full marks**

Q.1] Do as directed   [10M]

    a) What a delicious flavour these mangoes have! (Make it declarative)

    b) I said to her, "Will you come for a party tomorrow?"(Change the speech)

    c) A woman is our immediate neighbour. She writes poetry. (Combine using clause)

    d) My cousin has drawn this picture. (Change the voice)

    e) I love to read short stories (Change to present continuous)

    f) The trespassers are prosecuted by us. (Change the voice)

    g) I am a student. (Make it interrogative)

    h) The system showed a mistake. (Make it imperative)

    i) Manas walked to the station. (Add an adverb)

    j) Appu is a boy. (Add an adjective and rewrite the sentence)

Q.2 A] Fill in the blanks.   [5M]

    a) I _____ (see) the Eiffel Tower when I _____ (stay) in Paris.

    b) They appreciated _____ attitude. (He/his)

    c) Do you think I ___ apply for this job? (Should/Ought to)

    d) My boss was fuming ____ anger. (Fill prepositions)

    e) Simple living and high thinking ___ (Was/Were) Gandhi's Philosophy.

Q.2 B] Correct the following sentences.   [5M]

    a) Anshu as well as her family are shifting to Mumbai.

    b) The teacher have called my parents for meeting.

    c) She began to working as junior officer.

    d) Rashi and Raghav parents are doctors. ('s/s')

    e) The lady which we saw yesterday is my neighbour.

Q.2 C] Answer the following.   [5M]
    a) Give antonym of the word 'obedient'.
    b) Give synonym of the word 'pain'.
    c) Give an example of homophone.

d) Give an example of homonym.

e) Mark the stress in the word 'record' when used as noun and verb.

Q. 3) Define the following.(Any 5)   [15M]

a) Cover letter.

b) Oral communication.

c) Stress and pitch.

d) Presentation Skills

e) Gesture and posture.

f) Relative clause and its two types.

g) Soft skills.

h) Mock interview.

Q.4) Write short notes on. (Any 3)   [15M]

a) Stethoscope

b) My schedule

c) 7cs' of written communication

d) Salient features of Group Discussion

e) Reasons to use a good dictionary.

f) Do's and Don'ts of Interview.

g) Body Language.

Q.5 A] Write an essay on any one of the following topics (150 words)   [15M]

a) "If I become a scientist....!

b) Social health in India.

c) 'Pharmacy Day' celebration.

d) Power point presentation.

OR

B] a) There is a vacancy for the post of pharmacist in a reputed pharma –industry situated in Mumbai.
Write an application for job to be submitted to HR manager of the company   [8M]

b) Differentiate formal and informal oral communication.   [7M]

Q.6 A] You are appointed as a mentor in an educational institute to counsel the students. Write an email to the director updating the progress of a student who had behavioral problem.   [8M]

B] i) Give phonetic transcription of vowels: sat, cow, caught, fool.   [4M]

ii) Write the key words for the given phonetic symbols of consonants.   [3M]

/θ/,, /dʒ/ and /w/

------------- All the best! --------------------

QP Code : **13763**

(3 Hours) [Total Marks : 70

N. B. : (1) All questions are **compulsory.**
(2) **Draw** neat labelled **diagrams** wherever **necessary.**

1. (a) What is super critical fluid state and give its applications.
   (b) Differentiate between additive and constitutive properties. 3
   (c) Calculate the relative vapour pressure lowering at 20° C for a solution 2
       containing 171.2 g of sucrose in 100 gm of water. The mol. wt. of sucrose is 3
       342.3 and mol.wt. of water is 18.02 gm/mole.
   (d) Define the following with examples:-
       (i) Homogenous system 4
       (ii) Intensive property
       (iii) Closed system
       (iv) Isochoric Process
   (e) Write a note on measurement of conductance
                                                                          3

2. (a) Explain the principle and method of liquefaction of gases by Claude's method.
                          OR 4
       Give the principle behind liquefaction of gases and write a note on aerosols.
   (b) Give the importance of dipole moment in predicting the geometry of molecular
       structure. 3
   (c) Derive the relation between Cp and Cv.
                                                                          4

3. (a) Justify relative lowering of vapour pressure is a colligative property.
   (b) An engine operating between 175° C and 50° C takes 500 J heat from a high 4
       temperature reservoir. Assuming that there are no frictional losses, calculate 4
       the work that can be done by this engine.
                          OR
   (b) Define entropy and give the different statements of second law of thermo
       dynamics.
   (c) Explain equivalent conductance of a weak electrolyte at infinite dilution.
                                                                          3

4. (a) What is critical phenomenon and explain Andrews I sotherms of carbon dioxide.
   (b) Define and explain refractive index. Give the principle of Abbe's refractometer. 4
   (c) Give relation between depression of freezing point and lowering of vapour 3
       pressure. 4
                          OR
   (c) Describe any one method to determine depression in freezing point as a
       colligative property.

5. (a) Write a note on polymorphism.   4
   (b) What is osmosis and describe modern osmometer.   4
   (c) Explain Hess's law of constant heat summation.   3

<div align="center">OR</div>

   Define the following :—
       (i) Heat of formation
       (ii) Heat of combustion
       (iii) Heat of solution

6. (a) Calculate the pressure of 0.5 mole of CO_2 gas in a container of 1 liter capacity   3
   at 27° C using the ideal gas equation and van der waal's equation.
   a = 3.608 lit^2 atm / $mole^2$
   b = 0.0428 lit / mole
   R = 0.0821 lit atm / K mole
   (b) Describe steam distillaiton.   3
   (c) Explain Gibb's free energy   3
   (d) State the postulates of Arrhenius theory of electrolytic dissociation.   2

(3 Hours) [Total Marks : 70

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

1. (i)   What is meant by biodiversity?   1
    (ii)   Enlist two fossil energy sources.   1
    (iii) Define primary producers.   1
    (iv)   What do you mean by environmental clearance?   1
    (v)   Define Noise pollution.   1
    (vi)   What do you mean by land filling?   1
    (vii) Give one example each of recycle and reuse.   2
    (viii) What is Indoor air pollution? Name some indoor pollutants and their effect.   2
    (ix)   Define primary air pollutants. Give one example.   2
    (x)   Enlist and explain three different types of wind power.   3

2. (i)   The Government of India has announced that after cleaning the river Ganga, it   4
           shall be used for transport and tourism in the form of floating hotels. Would it
           fit in all criteria for a sustainable development? Justify your answer.
    (ii)   Write a detailed account of secondary air pollutants.   3
    (iii) Write a note on Environmental regulations in India.   4
                                        OR
    Discuss the entire procedure of obtaining environmental clearance.

3. (i)   According to a report the consumption of papers is on rise. The paper industry   4
           is third largest in the world. Uncontrolled manufacturing and use of paper is threat
           to environment. As a responsible citizen how one can use 3R control measure
           to tackle this problem?
    (ii)   Describe sources and treatment of polluted water.   3
    (iii) Write a note on "Carbon credits in economics and trade".   4

4. (i)   How does urbanization affect environment?   2
    (ii)   What are different control measures against Air pollution?   3
    (iii) Discuss the penalties and punishment under Environment Protection Act.   2
    (iv)   Define disaster management. Enlist and explain four stages of planning for it.   4

5. (i)   What are global environmental concerns related to population?   3
    (ii)   What are different levels of sounds? What could be impact of sound on human   4
           health?

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    (iii) Write a detailed note on solar energy with its principle, advantages, disadvantages,   4
methods and machinery to generate solar power.

6. (i) What are ecological pyramids? How are they classified? What information do   3
they convey? Discuss with examples.

    (ii) What are effects of water pollution on human health? Explain Minamata disease.   3

  (iii) Explain the role and stand of judiciary system and outcomes of Taj trapezium
case.   3

  (iv) Compare the conventional sources of energies against the hydropower as renewable
source of it.   2

———————

Total Marks : 70   Duration : 3Hrs

N.B.: 1. All questions are compulsory

2. Figures to right indicate full marks

Q. No.1   [A]   Explain the following terms (Any five):   (5)
   i)   Reaction co-ordinate diagram
   ii) Catalyst
   iii) Fast kinetics
   iv) Node
   v)   Complex
   vi) Field effect

[B]   Fill in the blanks (Any five):   (5)
   i)   Ground state electronic configuration of Oxygen is _____ .
   ii) Lewis structure for ozone (O_3) is _____ .
   iii) The $d_{x^2-y^2}$ orbital has _____ symmetry along the x and y axis.
   iv) The half-life of a first order reaction whose rate constant is 0.80 hr^{-1} is _____ .
   v)   Charge transfer complex formation is favoured if the donor has a _____ ionization potential.
   vi) In an electrostatic potential surface, _____ colour represents a neutral region.

[C]   Match the following: (5)

A	B
i) Symmetry elements in BH_3	a) π symmetry
ii) Valence electrons of Co (At. No. 27)	b) C_2, C_3 axis, σ_v plane of symmetry
iii) Shape of molecule with 4 bonding pairs and 1 lone pair of electrons as per VSEPR	c) Phase transfer catalyst
iv) d_{yz} orbital	d) Trigonal bipyramidal
v) Quaternary ammonium compounds	e) $3d^7$, $4s^2$

Q. No.2   [A]   Draw resonating structure for the following:

(i)   (ii)   (2)
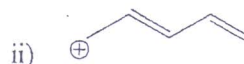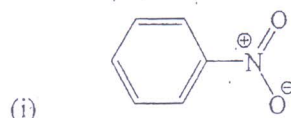
[B]   Explain the concept of three center-two electron bond based on QMOT rules.   (3)

[C]   Fill in the blanks: (3)
   i)   Large KIE is seen when hydrogen is replaced with _____ and it referred as _____ kinetic isotope effect.
   ii) The magnitude of kinetic isotope effect is directly related to percent change in _____ and the KIE value lies in the range _____
   iii) In KIE, an atom is replaced with its _____ and a change in _____ of chemical reaction is observed.

[D]   What is electrophilic catalysis? Discuss its types.   (3)

Q. No.3   [A]   Draw the Walsh diagram representing the pyramidal form of CH_3 fragment on the basis of MOT. Indicate the HOMO and LUMO.   (3)

[B]   Compare the planar and pyramidal forms of CH_2 according to MOT.   (3)

[C]   What is Boltzmann distribution? Explain its dependence on temperature.   (3)

[D]   The rate constant for a reaction is 0.768 s^{-1}. Calculate the time required to complete 65% of the reaction.   (2)

Q. No.4   [A]   What are group orbitals? Draw a Walsh diagram representing molecular orbitals of a larger molecule which is made by mixing group orbitals of a smaller fragment.   (3)

[B]   What is QMOT? Explain its purpose and enlist atleast four rules of QMOT.   (3)

[C]   How is kinetics of a reaction studied? Explain with the help of a suitable example(s).   (3)

[D]   Compare and contrast between metal ion and nucleophilic catalysis.   (2)

Q. No.5   [A]   Give reasons for the following: (3)

  i)   As more chlorine atoms are attached to methane, molecular dipole decreases.

  ii)   C-I bonds are more reactive than C-Cl bonds in reactions like S_N2 and E2.

  iii)   The bond angle in NH_3 molecule is smaller than tetrahedral bond angles.

[B]   Discuss the factors that favour pyramidalization in carbon free radicals. Give suitable examples.   (3)

[C]   What are similarities and differences in transition state theory and Arrhenius rate law?   (3)

[D]   What are charge transfer complexes? Explain the theory behind their formation.   (2)

Q. No.6   [A]   Complete the following table on the basis of hybridization concept: (3)

Molecule	Hybridization state of the underlined atom	Molecular shape
$\underline{A}lCl_3$		
$\underline{P}Cl_5$		
$\underline{C}$ of acetylene		

[B]   Write a note on specific acid catalysis.   (4)

[C]   Explain microscopic reversibility in chemical reactions.   (2)

[D]   The reaction co-ordinate diagram for conversion of naphthalene (N) to naphthalene-1-sulphonic acid (1-S) and naphthalene-2-sulphonic acid (2-S) is shown below. Fill in the blanks: (2)
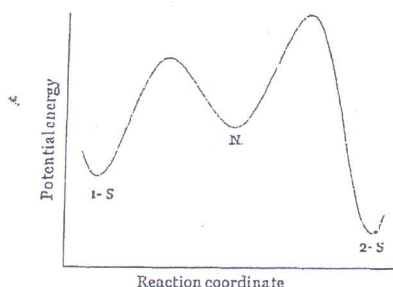
  i)   Kinetically controlled product is _____.

  ii)   Thermodynamically controlled product is _____.