3rd Sem. / TP / TC

Subject : Physical & Org. Chem. / Basic Chemistry

Time : 3 Hrs.   M.M. : 100

SECTION-A

Note: Objectives type questions. All questions are compulsory   (10x1=10)

(Course Outcome/CO)

Q.1   Write an example of a First order reaction   (CO-2)

Q.2   The rate of a chemical reaction increases with ___ of temperature. (increase/ decrease)   (CO-2)

Q.3   Define catalytic inhibitors.   (CO-3)

Q.4   Define photo catalysis.   (CO-3)

Q.5   Chemical equilibrium can be seen only for ____ system. (closed/open)   (CO-4)

Q.6   Write an example of strong acid.   (CO-5)

Q.7   Write the general formula for alkanes   (CO-6)

Q.8   What is formaline?   (CO-6)

Q.31 What are diazonium compounds? How can we prepare benzene from diazonium compound.   (CO-6)

Q.32 Give difference between soap and detergent. (any 5)   (CO-7)

SECTION-D

Note: Long answer type questions. Attempt any three questions.   (3x10=30)

Q.33 a)   What are the differences between lyophilic and lyophobic solutions?

      b)   Explain Brownian motion.   (CO-1)

Q.34 Discuss the mechanism of   (5+5) (CO-5)
      a)   acidic buffer   b)   basic buffer

Q.35 a)   What are aliphatic amines? Discuss the classification of amines.

      b)   How can we detect the presence of Cl in aliphatic compounds?   (CO-6)

Q.36 Define soaps. Write the chemical composition of soaps. Discuss the mechanism of cleaning action of soaps.   (CO-7)

                                          (2+3+5)

(**Note:** Course outcome/CO is for office use only)

Q.9 What are aromatic compounds? (CO-6)

Q.10 The formula of nitroglycerine is ____. (CO-6)

SECTION-B

Note: Very Short answer type questions. Attempt any ten parts (10x2=20)

Q.11 Define emulsion. (CO-1)

Q.12 State 2 differences between colloids and true solution. (CO-1)

Q.13 Write the formula to calculate the rate constant for 2nd order reaction. (CO-2)

Q.14 Give two difference between order and molecularity. (CO-2)

Q.15 What is the effect of surface area on the rate of a chemical reaction. (CO-2)

Q.16 Give an example of auto catalysis (CO-3)

Q.17 Give 2 characteristics of a catalytic reaction. (CO-3)

Q.18 What are enzymes. (CO-3)

Q.19 State the law of mass action. (CO-4)

Q.20 State 2 characteristics of a chemical equilibrium (CO-4)

(2) 182631/122631/32631

Q.21 What is the effect of pressure on the equilibrium of a chemical reaction? (CO-4)

Q.22 Define hydrogenation of oils. (CO-7)

SECTION-C

Note: Short answer type questions. Attempt any eight questions. (8x5=40)

Q.23 State and explain electrophoresis. (CO-1)

Q.24 State Le Chatelier's principle. (CO-4)

Q.25 Give definition of acid and base as per the Arrhenius concept. (2½+2½) (CO-5)

Q.26 Define pH. Write its mathematical expression. How does the pH of an acidic solution vary? (2+1+2) (CO-5)

Q.27 Define neutralization reaction. State the colour of phenolphthalein and methyl orange in (CO-5)
a) acidic medium b) basic medium

Q.28 Write the chemical formula of Urea. Give its four uses. (1+4) (CO-6)

Q.29 Write a short note on aldol condensation (CO-6)

Q.30 What are phenols? Give 4 applications of phenol. (CO-6)

(3) 182631/122631/32631