

SEAT No. _____

No. of Printed Pages:02

(66) SARDAR PATEL UNIVERSITY
M.Sc.Semester-IV: Analytical Chemistry Examination (CBCS)

April-2018, Thursday, Date: 12.04.2018

Time: 02.00 p.m. to 5.00 p.m., Paper: PS04CANC03

Subject: Analysis of Industrial Products

Total Marks: 70

N.B.: i) The numbers of the marks carried by each question is indicated at the end of the question
ii) Assume suitable data if considered necessary and indicate the same clearly.

Q.1 Highlight the correct option [08]

- i) Which of the following deals with micro structure of polymer?
a) ACM b) AFM
c) SEM d) both (b) and (c)
- ii) Which type of precaution require when Na₂OCH₃ use for non-aqueous titration of sulfa drug?
a) protect from acidic pH b) protect from CO
c) protect from N₂ d) protect from H₂O and CO₂
- iii) Erythromycin itself absorbed radiation _____
a) strongly in UV region b) weakly in UV region
c) moderately in UV region d) both (b) and (c)
- iv) End-group analysis of polymer provide _____ molecular weight.
a) Number average b) Weight average
c) Viscosity average d) Absolute
- v) Which of the following is true for iodine value?
a) Number of gm. of iodine absorbed by 100 gm. b) Number of gm. of iodine absorbed by 100 mg.
c) Number of mg. of iodine absorbed by 100 gm. d) None of these
- vi) Which of the following oil is use as adulterant in high quality oil?
a) Olive oil b) Walnut oil
c) Rice-bran oil d) Almond oil
- vii) Give the name of detector mainly use for analysis of 'P' and 'S'?
a) TCD b) ECD
c) FPD d) SCD
- viii) What are the factors affected pesticide stability?
a) CO b) Winds
c) Both a) & b) d) H₂O

Q.2 Attempt any SEVEN [14]

- i) Give the definition of 'Forensic Science'.
ii) What type of information retrieve from 'degree of polymerization'?
iii) Explain the limitation of end group analysis.
iv) What is the scope of residual analysis for pesticide?
v) Briefly discuss the harmful effect of herbicides.
vi) Explain the application of GC-MS in pharmaceutical analysis.
vii) Discuss the principle of Penicillin analysis.
viii) Differentiate acid and saponification values.
ix) Discuss application of surfactant.

C.P.T.O.)

- Q.3** a) Explain the various types of microscopic techniques use for polymer analysis and its advantages and limitations. [06]
 b) Discuss the significance of average molecular weight of polymer. Give the instrumental diagram of GPC and explain its working. [06]
 OR
- Q.4** b) Discuss the analytical techniques use in forensic analysis. [06]
 a) Discuss the introductory note on agrochemicals. A commercial sample of insecticide contain Cu was treated with HNO₃ and evaporate to dryness. After dissolution of residue the Cu was precipitate with α -benzoinoxime if the weight of sample taken 15.443 gm. and weight of precipitate having the formula Cu(C₁₄H₁₂NO₂)₂ is 0.6314 gm then calculate % of Cu in insecticide. (At. Wt Cu =63). [06]
 b) Describe the chromatographic techniques used for pesticide analysis and its specification and detectors. [06]
 OR
- b) Explain structure of various pesticide and insecticide. Explain the type of formulation pesticide, its quality regulation and protocols for analysis.
- Q.5** a) Give the note on antipyretic and analgesic. If 500 mg sample contain colored compound 'X' is dissolve and diluted to 500 mL. the absorption of an aliquot of the solution measured at 400 nm in 1 cm cell is 0.9, 10 mg. of pure 'X' is dissolve in 1 lit. of same solvent and the absorption measured in 0.1 cm cell at same wavelength is found to be 0.3 what is the % of 'X' for the first sample. [06]
 b) Discuss the principle of analysis of (i) Glucose analysis (ii) Cholesterol analysis (iii) Creatinine analysis [06]
 OR
- b) Discuss the analysis of APC tablet. Aspirin drug sample solution is analyzed by transferring 5 mL. of solution to 1 cm. cell. The % T measured is 75.3 % a 1 mL. portion of 0.01 M pure aspirin is added to the cell and the % T changes to 62.5 % calculate the concentration of aspirin in the given solution.
- Q.6** a) Explain the significance of oil and fat analysis. Discuss detection of Palmolein in groundnut oil and animal fat in vegetable fat. [06]
 b) Discuss the classification of synthetic detergent and its analytical importance. The phosphate in 3.0 gm sample of detergent powder was precipitated by adding 1 gm AgNO₃. The solution was filtered to remove precipitate of AgPO₄. The filtrate required 18.23 mL. 0.138 M KCNS for back titrations. Calculate % of phosphate in detergent (At. Wt.P = 31, Ag = 108) [06]
 OR
- b) Give the definition, principle and analytical importance of (i) thiocynogen value, (ii) R.M. Value, (iii) Polenske value. (iv) Peroxide value (v) Ester value.

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