

2021

CHEMISTRY*(Applied Chemistry)***[General]**

PAPER – IV

*Full Marks : 45**Time : 2 hours**The figures in the right hand margin indicate marks**Candidates are required to give their answers in their own words
as far as practicable**Illustrate the answers wherever necessary***GROUP – A**Answer any **one** of the following questions : 5 × 1

1. (a) Write down the differences between octane and cetane numbers.
(b) What is R_f factor ? For what purpose it is used ? 2 + 1 + 2
2. (a) What is meant by peptide linkage ? What are nucleotides and nucleosides ?
(b) What is naphtha ? 2 + 2 + 1

GROUP – BAnswer any **two** of the following questions : 20 × 2

3. (a) What is superphosphate of lime ? How will you prepare ammonium sulphate from gypsum ? Give the reactions involved.
(b) Write down the basic principle of separation of TLC.
(c) What is artificial rubber ? Why compounding of artificial rubber is done ?
(d) What are artificial sweeteners ? Give two examples.
(e) Name the different types of RNA molecules. (1 + 4) + 4 + (2 + 3) + (2 + 2) + 2

(Turn Over)

4. (a) Write down the name and structure of the monomer unit of (i) SBR rubber and (ii) natural rubber.
- (b) Point out the differences between addition and condensation polymerization with examples.
- (c) What is carbon black ?
- (d) What is coloured glass ? Define 'Cullet' and 'annealing' of glass.
- (e) What is LPG ? How is it prepared from petrol ? How any leakage of LPG cylinder can be detected ? $(2 + 2) + 4 + 2 + (1 + 2 + 2) + (1 + 3 + 1)$
5. (a) Write short notes on (any two) :
- (i) Vulcanisation of rubber
- (ii) Catalytic cracking
- (iii) Dodecyl benzene sulphonate
- (iv) Sulphanilamide.
- (b) What is Portland cement ? Define 'setting of cement'.
- (c) Why colouring of food is needed ? What is antioxidant ? Give an example.
- (d) Describe the manufacturing process of PVC briefly. $(4 + 4) + (2 + 3) + (2 + 1 + 1) + 3$
6. (a) Write short notes on (any two) :
- (i) Congo red
- (ii) Aspirin
- (iii) Food additives
- (iv) Hydrogenation of oil.
- (b) What is standard deviation ? What are its advantages ?
- (c) What is pesticide ? How DDT is manufactured ?
- (d) Write down the name and structure of the monomer unit of Nylon-66.
- (e) Why antiknock compound is mixed with fuel ? $(4 + 4) + (2 + 2) + (1 + 3) + 2 + 2$