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SUBJECT CODE NO: - 2007
FACULTY OF SCIENCE AND TECHNOLOGY
B.Sc. F.Y (Sem-II)
EXAMINATION JUNE/JULY 2022
Chemistry Paper-IV
(Physical Chemistry)

[Time: 1:53 Hours]

[Max.Marks:50]

Please check whether you have got the right question paper.

- N.B 1) Attempt all questions.
 2) Illustrate your answer with suitable labeled diagram
- Q.1 Derive Kinetic gas equation Deduce Boyle's and Charles's law 20
 OR
 Discuss in detail laws of crystallography. Differentiate between amorphous and crystalline solids.
- Q.2 Derive integrated rate equation for second order reaction having equal concentration. Give characteristics of catalyst 20
 OR
 Write short notes on any four
 a) Calculate distance between two points lying on the straight line
 i) (5,2) and (3,2)
 ii) (2,7) and (-4,3)
 b) Using logarithm calculate
 i) 226×119
 ii) $426 \div 109$
 c) Differentiate between solid and liquid.
 d) Nematic and cholesteryl liquid crystal
 e) Application of colloids
 f) Gel and its classification
- Q.3 Multiple choice questions 10
 1) The average kinetic energy of molecule is directly proportional to -----
 a) Temperature b) Pressure
 c) Volume d) Absolute temperature
- 2) $V \propto \frac{1}{P}$ is -----law
 a) Boyle's b) Charles Law
 c) Avogadro's law d) None of these
- 3) $K_o = x/t$ represents -----order reaction.
 a) Zero b) First
 c) Second d) Pseudo

- 4) The rate of reaction increases with -----of concentration
- | | |
|---------------|------------------|
| a) Increase | b) Decreases |
| c) Both a & b | d) None of these |
- 5) Thread like liquid crystals are called -----
- | | |
|------------|------------------|
| a) Nematic | b) Cholesteryl |
| c) Smectic | d) None of these |
- 6) The example of emulsion is -----
- | | |
|----------|----------|
| a) Paint | b) Smoke |
| c) Milk | d) Curd |
- 7) Amorphous solids are -----
- | | |
|---------------|------------------|
| a) Isotropic | b) Anisotropic |
| c) Monotropic | d) None of these |
- 8) HF is a good example of -----bond
- | | |
|----------------|------------------|
| a) Co-ordinate | b) Hydrogen |
| c) Covalent | d) None of these |
- 9) Log of 200-----.
- | | |
|---------|------------------|
| a) 3.00 | b) 2.00 |
| c) 1.00 | d) None of these |
- 10) The slope of intercept of the line $2y=-yx+2$ is -----
- | | |
|-----------|----------|
| a) (1,-2) | b) (2,1) |
| c) (-2,1) | d) (1,2) |