

## BSc (F&amp;S) (NEP) Sem.-1 Examination

MDC-114

Chemistry of Fire

Time : 1-00 Hour]

February-2025

[Max. Marks : 25

- Q 1 (i) What is latent heat? Explain the types of latent heat. Define higher calorific value and lower calorific values. 5
- (ii) Describe briefly how does combustion originate, spread and terminated? 5
- OR
- (i) Describe smouldering process. How is it treated as dangerous? 5
- (ii) Why are radiations which are emitted from a flame important? Give reasons. What are the factors involved in predicting the intensity of radiation from flame. 5
- Q 2
- (i) Describe important fire properties of Ammonia. 5
- (ii) Describe important fire properties of Carbon monoxide. 5
- OR
- (i) What will happen, when: 10
- Ammonia combines with chlorine.
  - Thioformaldehyde ( $\text{CH}_2\text{S}$ ) react with fluorine.
  - Methane burn in presence of oxygen.
  - Hydrazine ( $\text{N}_2\text{H}_4$ ) react with oxygen.
  - Potassium permanganate reacts with glycerine.
- Q 3 MCQ [Attempt any Five out of Six] 5
- (i) For the wooden match the wood is decomposed by the heat of flame into gaseous fuel and char. This decomposition process is called:
- Pyrolysis
  - Spontaneous
  - Smouldering
  - Diffusion
- (ii) ..... step in which the chain-carriers attack other reactant molecules, thereby producing a new chain-carrier in each attack:
- Initial
  - Termination
  - Redaction
  - Propagation
- (iii) A liquid with a low flash point increases the ..... hazards:
- Physical
  - Kinetic
  - Chemical
  - Fire
- (iv) More than ..... of the fuel mass is converted to carbon monoxide during smouldering process:
- 10%
  - 40%
  - 30%
  - 20%
- (v)  $100^\circ\text{C}$  is equal to:
- $200^\circ\text{F}$
  - $232^\circ\text{F}$
  - $273^\circ\text{K}$
  - $212^\circ\text{K}$
- (vi) Initial temperature of 100 gram water is raised to  $50^\circ\text{C}$  from  $20^\circ\text{C}$ . Total heat consumed is equal to:
- 100 calories
  - 200 calories
  - 300 calories
  - 400 calories