23101

21819

3 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Answer any FIVE of the following: **20**

a) Write down the hazards associated with LPG storage, handling and transportation.

b) List out the physical and chemical properties of acetylene.

c) List out the physical and chemical properties of solvents.

d) List out the physical and chemical properties of plastics.

e) Write down the chemical properties of sodium and potassium.

f) Define flash point, fire point, auto ignition temperature and flammability range.

g) Write down the chemical formula of methane, ethane, propane, butane, ethylene acetylene, halogens and LPG.

Marks

2. Answer any TWO of the following: **16**

a) Write down the principle methods of fire extinguishing with example.

b) Write down the relation between divisions and zones under hazardous area and write down typical safe area/zone area.

c) Explain the concept of hazardous zones and write a brief note on hazardous area classification for dust.

3. Answer any TWO of the following: **16**

a) Define fire, fire triangle, tetrahedron of fire. Also write classification of fires.

b) List out the types of DCP extinguisher and write down their extinguishing property and uses.

c) Write down protection level categories and types of protection under hazardous area.

4. Answer any TWO of the following: **16**

a) Compare:

(i) Detonation and Deflagration

(ii) Exothermic and Endothermic reactions

b) Give the meaning:

(i) Premixed flame

(ii) Diffusion flame

(iii) Turbulent flame

(iv) Stationary flame

(v) Propogating flame

(vi) Jet

(vii) Flash

(viii) Burning velocity.

c) Write down the formulae required to calculate volume of water tanks rectangular tanks and cylindrical tanks.

Marks

5. Answer any TWO of the following: **16**

a) Write down the formula and SI units of friction loss, velocity, pressure and discharge.

b) Define water hammer, jet reaction, back pressure and efficiency.

c) Define with example:

(i) Conduction

(ii) Convection

(iii) Radiation.

6. Answer any TWO of the following; **16**

a) Define static electricity. List out the hazards of state electricity and preventive measures to be taken.

b) Define resistance electrical A.C, ELCB power.

c) List out causes of electric fires and precaution to avoid electric fires.
