

Seat No. : _____

AB-103

April-2019

B.Sc. (Fire), Sem.-IV

Fire Prevention and Protection

Time : 2:30 Hours]

[Max. Marks : 70

1. (a) In what way the properties of building material affect fire fighting and describe the fire properties of timber, bricks and concrete. 7
- (b) How many types of safety appraisal are there ? Explain in details Qualitative and quantitative appraisal and suggest a plant safety inspection checklist. (main headings only) 7

OR

- (a) Describe the role of Fire officer working in refinery with respect to fire prevention and protection in the plant.
- (b) What is active and passive fire protection systems ? Give four names each in passive and active. Indicate the importance of house keeping and general precautions to be taken to avoid fire in industries.
- (c) MCQ Attempt any **four** : 4
- (1) At what temperature the moisture from timber is driven off
- (a) 70°C (b) 80°C
- (c) 90°C (d) 100°C
- (2) A 225 mm thick wall gives how much fire resistance ?
- (a) 2 hrs (b) 3 hrs
- (c) 4 hrs (d) 6 hrs
- (3) The melting point of pure aluminium is
- (a) 620°C (b) 630°C
- (c) 660°C (d) 680°C
- (4) This is not a part of mixture in preparing Mortar
- (a) Clay (b) lime
- (c) sand (d) iron bar
- (5) Fiber glass is combination of
- (a) glass & wool (b) glass & cotton
- (c) glass & sand (d) glass & plastic
- (6) Frequency rate comes under which safety appraisal ?
- (a) quantitative (b) qualitative
- (c) preventive (d) corrective

2. (a) As per Petroleum Act define following terms :
 Petroleum, petroleum class A, petroleum class B, petroleum class C, flash point, import of petroleum, motor conveyance. 7
- (b) What are the markings provided on cylinders, permanent and liquefiable gas cylinders. 7

OR

- (a) What are the general provisions in gas cylinder rules 1981 related to filling, possession, import, and transport of cylinders and to obtain approval from CCE, what particulars need to be submitted ?
- (b) What should be the general requirements and job requirements of fire fighting personnel ? Define in 2 to 3 lines : foam tender, foam nurser, Emergency rescue tender.
- (c) MCQ Attempt any **four** : 4
- (1) What is full form of CCE
 (a) Chief controller of Electricity (b) Chief controller of Explosives
 (c) Chief checker of Explosives (d) None
- (2) Where the head office of CCE located ?
 (a) Kanpur (b) Kolkata
 (c) Nagpur (d) Mumbai
- (3) OISD standard for fire protection of petroleum refinery is
 (a) 113 (b) 114
 (c) 115 (d) 116
- (4) Petroleum having flash point below 23°C is called
 (a) petroleum A (b) petroleum B
 (c) Petroleum C (d) Petroleum D
- (5) Explosive range of LPG is
 (a) 10 to 25 parts (b) 15 to 35 parts
 (c) 40 to 59 parts (d) 19 to 95 parts
- (6) Hydrant should be how many mtrs away from storage tank ?
 (a) 10 mtrs (b) 15 mtrs
 (c) 30 mtrs (d) 45 mtrs

3. (a) What are the hazards of fire propagation ? Describe in details in how many ways fire can spread and what is the common mode of fire spread ? 7
- (b) What is basic difference between separation, compartmentation and segregation ? How the compartmentation helps in fire control and factors to determine the extent of compartmentation. 7

OR

- (a) What is stability, insulation and integrity of building ? Explain flash over and stack effect.
- (b) Write the importance of fire resistance/fire proofing material and explain properties of fire proof RCC, mastics, fibre glass, Intumescent coating.
- (c) MCQ Attempt any **three** : 3
- (1) One of it, is not a method of heat transfer
- (a) radiation (b) convection
- (c) conduction (d) illumination
- (2) It occurs due to gradual shortage of oxygen
- (a) front draft (b) reduced draft
- (c) back draft (d) none
- (3) It is not a thermoplastic material
- (a) melamine (b) PVC
- (c) polystyrene (d) polyethylene
- (4) Fire duct can be used in following places
- (a) car park extract system (b) smoke extract system
- (c) kitchen extract system (d) All three
- (5) The duct cross sectional area should not reduce by more than
- (a) 10% (b) 15%
- (c) 20% (d) 25%
4. (a) List out the documents required to be submitted for Fire Insurance Claim. 7
- (b) Why fire insurance cover is needed, what are other insurance covers, and in order to claim damages, what are the expenses covered and perils covered ? 7

OR

- (a) By paying extra premium, which perils and expenses can be covered in fire policy ?
- (b) What are the losses and expenses not covered in insurance policy, perils not covered and properties not covered ?

(c) MCQ attempt any **three** :

3

(1) For removal of debris the maximum claim can be

- (a) 1% (b) 2%
- (c) 3% (d) 4%

(2) Architectfee can be claimed upto how much

- (a) 1% (b) 2%
- (c) 3% (d) 4%

(3) What is full form of TAC ?

- (a) Tariff accounts committee (b) Tariff advisory committee
- (c) Total advisory committee (d) Tariff advisory council

(4) Discount is given in premium for good claim for value more than

- (a) 30 crores (b) 40 crores
- (c) 50 crores (d) 60 crores

(5) What is abbreviation of LPC ?

- (a) Legal prevention council (b) Loss prevention council
- (c) Loss prevent council (d) Loss prevention committee