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## GIET MAIN CAMPUS AUTONOMOUS GUNUPUR – 765022

B. Tech Degree Examinations, November – 2021

(Seventh Semester)

**BMEPE7031 – FIRE AND SAFETY ENGINEERING**

(Mechanical Engineering)

Time: 3 hrs

Maximum: 100 Marks

**Answer ALL Questions****The figures in the right hand margin indicate marks.****PART – A: (Multiple Choice Questions)****(2 x 10 = 20 Marks)****Q.1. Answer ALL questions**

[CO#] [PO#]

- |  |  |     |          |
|--|--|-----|----------|
| a. PASS stands for   |  | CO1 | PO1      |
| (i) Pull, Aim, Sweep, Strike   | (ii) Pull, Aim, Squeeze, Sweep   |     |          |
| (iii) Both i & ii  | (iv) None of these   |     |          |
| b. Which type of fire extinguish do you use to fight an electrical fire if a carbon dioxide extinguisher is unavailable? |  | CO1 | PO1/PO12 |
| (i) Water  | (ii) Wet   |     |          |
| (iii) Foam   | (iv) Dry Powder  |     |          |
| c. A water fire should be on fires started by which of the following materials?  |  | CO1 | PO1/PO12 |
| (i) Materials such as gasoline that are highly flammable   | (ii) Fires caused by electricity                                       |     |          |
| (iii) Materials made up of combustible metals  | (iv) Materials such as paper, textiles, wood and other solid materials |     |          |
| d. SCBA stands for   |  | CO2 | PO1/PO12 |
| (i) Self controlled breathing apparatus  | (ii) Self contained breathing apparatus                                |     |          |
| (iii) Self controlled breathing apparatus  | (iv) Both i & ii   |     |          |
| e. ----- is used to regulate the oxygen content in breathing apparatus.  |  | CO2 | PO1      |
| (i) Face piece   | (ii) Regulator assembly  |     |          |
| (iii) Cylinder assembly  | (iv) Back piece assembly   |     |          |
| f. When do you go to the fire assembly point?  |  | CO3 | PO1      |
| i) When discussion about fire safety is taking place   | iii) When the fire alarm goes off                                      |     |          |
| ii) If you are the first one to see the fire   | iv) When practicing using the different types of fire extinguishers    |     |          |
| g. Risk assessment is ----- measure  |  | CO4 | PO1      |
| (i) Economic   | (ii) None of these   |     |          |
| (iii) Financial  | (iv) All of the above  |     |          |
| h. ----- are a practical and consistent way for everyone to commit to safety.  |  | CO4 | PO1      |
| (i) Safe work procedures   | (ii) Fire practice   |     |          |
| (iii) Safe work system   | (iv) None of above   |     |          |
| i. Safe work procedures is a document the sequence of steps for doing the task safely                                    |  | CO4 | PO1      |
| (i) True   | (ii) False   |     |          |
| j. An explanation of the potential hazards and safety controls needed to reduce potential risk                           |  | CO4 | PO1      |
| (i) True   | (ii) False   |     |          |

**PART – B: (Short Answer Questions)****(2 x 10 = 20 Marks)**Q.2. Answer **ALL** questions

	[CO#]	[PO#]
a. Differentiate Fire triangle and Tetrahedron.	CO1	PO1
b. What are the elements of Fire triangle?	CO1	PO1
c. Classify various types of Fire.	CO1	PO1
d. How are thermal damage and corrosion in a hose similar or different?	CO2	PO1
e. List out the different types of Hose.	CO2	PO1
f. Write the important of small gear.	CO2	PO1
g. List out the role of OSHA.	CO3	PO1
h. What do you meant by published codes.	CO3	PO1
i. What is the role of PPE in workplace safety?	CO4	PO1/PO12
j. Why is it important to prevent slips, trips, and falls?	CO4	PO1

**PART – C: (Long Answer Questions)****(15 x 4 = 60 Marks)**Answer **ALL** questions

	Marks	[CO#]	[PO#]
3. a. Locate and list the various types of fuels, oxidizers, and heat sources in your workplace. Identify the fire prevention strategies that could be implemented to reduce the likelihood of a fire occurring. Also, identify the fire protection strategies that could be implemented once a fire does occur.	15	CO1	PO1
(OR)			
b. Explain various foam making equipment and briefly explain the process of manufacturing of foam.	15	CO1	PO1
4. a. Identify basic inspection, care, and maintenance methods for fire hose.	15	CO2	PO1
(OR)			
b. Describe the various water relay system used for fire prevention	15	CO2	PO1
5. a. Write a case study to develop an emergency plan for the building in which you work or attend classes.	15	CO3	PO1
(OR)			
b. Write one case study on incendiary apartment house fire. Explain with the events details.	15	CO3	PO1
6. a. How can we prevent the fire accident in a chemical plant? Design the safety monitoring system for that case.	15	CO4	PO3
(OR)			
b. Write one case study on Fire Incident Event. Explain the procedure for preventing the fire. State the roles of Fire department in this event.	15	CO4	PO1/ 12

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