



USN

--	--	--	--	--	--	--	--	--	--

Question Paper Version : A

**Third Semester B.E. Degree Examination, June/July 2024**  
**Fire Safety in Buildings**

Time: 1 hr.]

[Max. Marks: 50

**INSTRUCTIONS TO THE CANDIDATES**

1. Answer all the **fifty** questions, each question carries one mark.
2. Use only **Black ball point pen** for writing / darkening the circles.
3. **For each question, after selecting your answer, darken the appropriate circle corresponding to the same question number on the OMR sheet.**
4. Darkening two circles for the same question makes the answer invalid.
5. **Damaging/overwriting, using whiteners** on the **OMR** sheets are strictly prohibited.

- 
1. The element of the Fire Triangle are  
 a) Heat, CO<sub>2</sub>, fuel  
 b) Heat, Oxygen, Fuel  
 c) Oxygen, wood, CO<sub>2</sub>  
 d) None of these
  2. Forest fires are a results of which types of combustion?  
 a) Spontaneous  
 b) Rapid  
 c) Explosion  
 d) Slow
  3. A chemical transformation in which heat energy is liberated is called  
 a) Exothermic Reaction  
 b) Combustion  
 c) Endothermic Reaction  
 d) Mestothermic Reaction
  4. Most Arson fires are started with :  
 a) Lead based paints  
 b) An oxidizing Agent  
 c) Petroleum based accelerants  
 d) Highly unsaturated oils
  5. Limitation or Removal of oxygen from the scene of fire is called as  
 a) Starvation effect  
 b) Inhibiting effect  
 c) Blanketing effect  
 d) Cooling effect
  6. Which color band denotes Carbon-dioxide content in the fire extinguisher?  
 a) Red  
 b) Blue  
 c) White  
 d) Black
  7. Fire Resistance in defined in terms of :  
 a) Temperature  
 b) Strength  
 c) Time  
 d) Heat Energy
  8. Methods of propagating Fire  
 a) Conduction  
 b) Convection  
 c) Radiation  
 d) All of these

9. Which of the following is required for combustion process?  
 a) Fuel                      b) Oxygen                      c) Heat                      d) Nitrogen
10. Which of the following has a highest Rate of Burning?  
 a) Fire in an open space                      b) Fire in an Enclosure  
 c) Both of the above have equal burning rates                      d) None of these
11. One Fire station should be located at every  
 a) Two square miles Area                      b) Three Square Miles Area  
 c) Four Square Miles Area                      d) One Square Miles Area
12. The colour of the exit signs shall be  
 a) Green                      b) Yellow                      c) Red                      d) Blue
13. Based on National Building code, Amusement, Recreation, Social, Religious, Travel etc., comes under which group of classification.  
 a) Group A                      b) Group B                      c) Group C                      d) Group D
14. Which is Non-combustible material?  
 a) Wool                      b) Straw                      c) Paper                      d) Iron Nails
15. \_\_\_\_\_ is considered as one unit of exist width  
 a) 250mm                      b) 500mm                      c) 300mm                      d) 450mm
16. What should be the travel distance of exists on any floor of Business Buildings?  
 a) 40m                      b) 45 m                      c) 30m                      d) 25m
17. Refuge Area should be provided in High Rise Building after \_\_\_\_\_ m of construction.  
 a) 20m                      b) 15m                      c) 25m                      d) 24m
18. During fire emergency in High Rise Building which escape way should be used?  
 a) Fire department Hydraulic ladder                      b) Emergency Exit  
 c) Lift                      d) Window
19. In order to Ensure minimum interference, the maximum travel distance between users and lift should be  
 a) 100 – 150ft                      b) 250 – 300ft                      c) 150 – 200ft                      d) 350 – 400ft
20. RTT is \_\_\_\_\_  
 a) Round Trip Time                      b) Reversal Trip Time                      c) Reduce Trip Time                      d) Right Trip Time
21. Which of the following does not affect the lift waiting time?  
 a) Rated Load                      b) Number of stops  
 c) Door Closed Time                      d) Handling Capacity
22. You should have at least \_\_\_\_\_ Escape Routes from each room in a Building.  
 a) 0                      b) 1                      c) 2                      d) 3
23. The water supply consists of a connection point from where the fire fighters can Tap water and is called as \_\_\_\_\_  
 a) Fire Hydrant                      b) Fire Point                      c) Water Towers                      d) Ditches

24. Which of the following factor is always greater than unity?  
 a) Load factor      b) Diversity factor      c) Demand factor      d) Coincidence factor
25. The flow to pipe is said to be Laminar if Reynolds Number is \_\_\_\_\_  
 a) < 2000      b) 2000 - 4000      c) > 4000      d) > 6000
26. Major loss in a pipe is a  
 a) Frictional Loss      b) Shock Loss      c) Entry Loss      d) Exit Loss
27. The type of pipe commonly used in water supply distribution schemes is  
 a) RCC pipes      b) Flame pipe      c) Cast Iron pipes      d) G.I pipes
28. The Layout of distribution of which water flows towards the outer periphery is  
 a) Dead End system      b) Grid Iron System      c) Ring System      d) Radial system
29. \_\_\_\_\_ is constructed outside the building to carry waste water discharge.  
 a) Gully Trap      b) P. Trap      c) S. Trap      d) Floor Trap
30. \_\_\_\_\_ provides only one sewer to carry both fuel sewage and Rain water.  
 a) Separate water carriage system      b) Combined water carriage system  
 c) Partially combined water carriage system      d) Conservancy system.
31. What device is used to control Air flow in Yest pipes?  
 a) Gate Valve      b) Damper      c) Crimpers      d) Bracket
32. In a Building to provide ultimate comfort to the occupants \_\_\_\_\_ can be used.  
 a) AC      b) HVAC      c) HAC      d) Ventilators.
33. How is Heat energy Transferred through the movement of air?  
 a) Radiation      b) Conduction      c) Convection      d) Induction
34. When people are working there has to be \_\_\_\_\_ to cause proper ventilation of premises?  
 a) Humidity      b) Air change      c) Temperature      d) Moisture
35. Air conditioning Involves  
 a) Control of Temperature      b) Control of Air motion  
 c) Control of Humidity      d) All of these
36. Which of the following is the objective of planned maintenance?  
 a) Elimination of Breakdown  
 b) Reduction of the deviations from optimum operating conditions  
 c) Elimination of unnecessary Repair  
 d) Long term Building preservation (Enhance Life Cycle)
37. It is quite evident that the incoming Air for ventilation should be \_\_\_\_\_ is summer and \_\_\_\_\_ is winter before it enters the Room.  
 a) Cool, Warm      b) Warm, Cool      c) Humid, Dry      d) Dry, Humid
38. Which of the following is NOT planned maintenance?  
 a) Design out      b) Routine      c) Corrective      d) Preventive

39. What is used to limit the movement of fire through Relatively small canceled passages such as under strain and Inside walls?  
a) Insulations                      b) Fire Breaks                      c) Draft stops                      d) Fire stops
40. The form of Energy that is Transferred through wires is called \_\_\_\_\_  
a) Energy                      b) Electrical energy                      c) Function                      d) Form of Energy
41. Ammeter is used to measure the \_\_\_\_\_ in the circuit.  
a) Electric current                      b) Potential Difference  
c) Resistance                      d) Volume
42. The Pachometer is used to locate the \_\_\_\_\_  
a) Steel Reinforcement                      b) Aluminium Reinforcement  
c) Tensile Reinforcement                      d) Surface Reinforcement
43. Visual Inspection Technique can be applicable to All materials.  
a) True                      b) False
44. \_\_\_\_\_ Technique is adopted for improving the Lateral load carrying capacity of structure  
a) Strengthening of Individual fating                      b) Near Surface Mounted Reinforcement  
c) Section Enlargement                      d) Jacketing
45. Radiography can be used of depth sizing of materials.  
a) True                      b) False
46. Alkali Aggregate Reaction can be prevented by  
a) Adding finely powered silica to convent mix  
b) Cutting the contact of concrete from external source of moisture  
c) Reducing the Alkali content of cement to less then 0.6%  
d) All of these
47. Following equation is Related to corrosion Rate  
a) Nearest equation                      b) Faraday's equation                      c) Both                      d) None of these
48. Which of the Below material is used for covering the cracks in the concrete members?  
a) Glue                      b) Challe powder                      c) Epoxy Resin                      d) Gypsum
49. Lower is pH, corrosion is  
a) Greater                      b) Lower                      c) Constant                      d) None of these
50. White washing is done during  
a) Annual Repair                      b) Day to Day Repair  
c) Special Repair                      d) Monthly Repair

\*\*\*\*\*