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**Question Paper Code: 59772**

B.E./B.Tech. DEGREE EXAMINATION, APRIL 2019

Open elective

Civil Engineering

15UME972 - INDUSTRIAL SAFETY AND ENGINEERING

(Common to CSE, ECE, EEE, EIE ,IT and Chemical Engineering branches)

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. The type of layout used for manufacturing steam turbines, is ..... CO1- R
  - (a) Product layout
  - (b) process layout
  - (c) fixed position layout
  - (d) any one of these
2. Standard time is equal to CO1- R
  - (a) Normal time minus allowances
  - (b) Normal time plus allowances
  - (c) Representative time multiplied by rating factor
  - (d) Normal time taken by an operation
3. The cost of a product change to correct safety defects is greatest CO2- R
  - (a) **After the product has been manufactured and installed**
  - (b) After the product has been patented
  - (c) During the manufacturing phase
  - (d) During the design phase
4. The end result of risk management is CO2- R
  - (a) To eliminate danger to the public
  - (b) To minimize cost to the company
  - (c) To reduce risk to an acceptable level
  - (d) None of the above

5. Which of the following is the primary reason for accident investigation? CO3- R  
 design?  
 (a) To identify a scapegoat (b) To take disciplinary action  
 (c) To prevent future accidents (d) None of the above
6. JSEAs add environmental concerns such as \_\_\_\_\_ into the CO3- R  
 formula.  
 (a) **Weather** (b) Importance (c) Time (d) Ease
7. Which of the following specific procedures must your training include, to CO4- R  
 protect you from exposure to hazardous chemicals?  
 (a) Appropriate work practices (b) Emergency procedures  
 (c) Personal protective equipment (d) **All of the above**
8. Which of the following data is not required for hazard identification? CO4- R  
 (a) Land use (b) Contaminant levels (c) Affected population (d) **Estimation of risk**
9. Protection of organizational facilities and employees is called CO5- R  
 (a) Adverse situation (b) **Security** (c) Safety (d) Health
10. Gantt chart provides information about CO5-R  
 (a) Production schedule (b) Inventory control  
 (c) Material handling (d) Material handling

PART – B (5 x 2= 10 Marks)

11. List four elements of cost of accident. CO1- U
12. What are the many types of safety audit? CO2-U
13. Define institutional bio safety committee. CO3- Ana
14. Explain Sound Hazards. CO4- U
15. Explain the DGFASLI. CO5- U

PART – C (5 x 16= 80 Marks)

16. (a) How employee can be motivated so as to wear PPE while CO1- Ana (16)  
 working?
- Or
- (b) Briefly explain about the development of safety management in CO1- Ana (16)  
 industries

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|-----|-----|----------------------------------------------------------------------------------------------------|---------|------|
| 17. | (a) | Identify the practical use of Preliminary Hazard Analysis.                                         | CO2-Ana | (16) |
|     |     | Or                                                                                                 |         |      |
|     | (b) | Illustrate the Fault tree Analysis procedure with an example.                                      | CO2-Ana | (16) |
| 18. | (a) | Explain in detail about role of Safety committee and supervisory role                              | CO3- U  | (16) |
|     |     | Or                                                                                                 |         |      |
|     | (b) | Explain the detail about principles of accident prevention.                                        | CO3- U  | (16) |
| 19. | (a) | Explain the General risk-management principles.                                                    | CO4- U  | (16) |
|     |     | Or                                                                                                 |         |      |
|     | (b) | Explain the EMS models with Case Studies.                                                          | CO4- U  | (16) |
| 20. | (a) | Explain Scope and Objectives of Training and Education.                                            | CO5- U  | (16) |
|     |     | Or                                                                                                 |         |      |
|     | (b) | Define the role of government agencies and private consulting agencies in safety training DGFASLI. | CO5- U  | (16) |

