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B.Tech. DEGREE EXAMINATION, MAY 2019
3rd to 8th Semester

15CH363E – SAFETY AND HAZARD ANALYSIS IN PROCESS INDUSTRIES
(For the candidates admitted during the academic year 2015 – 2016 to 2017 – 2018)

Note:

- (i) **Part - A** should be answered in OMR sheet within first 45 minutes and OMR sheet should be handed over to hall invigilator at the end of 45th minute.
- (ii) **Part - B** and **Part - C** should be answered in answer booklet.

Time: Three Hours

Max. Marks: 100

PART – A (20 × 1 = 20 Marks)
Answer **ALL** Questions

1. Why should regular inspections of the work place take place?
 (A) To check whether the working environment is safe
 (B) To check that all employees are present
 (C) To check that everyone is doing their job
 (D) To prepare for a visit from on HSE inspector
2. How can you help to prevent accidents?
 (A) Don't report them
 (B) Know how to get help quickly
 (C) Report any unsafe conditions
 (D) Know where the first aid kit is kept
3. Who is responsible for signing a company safety policy?
 (A) Site manager
 (B) Company safety officer
 (C) Company secretary
 (D) Managing director
4. Exposure to asbestos fibres may cause which one of the following
 (A) Dermatitis
 (B) Asthma
 (C) Glandular fever
 (D) Asbestosis
5. Which one of the following must be in a company's written health and safety policy?
 (A) Aims and objectives of the company
 (B) Organization and arrangements in force for carrying out the health and safety policy
 (C) Name of the health and safety adviser
 (D) Company directors home address
6. Why may a confined space be dangerous to work in?
 (A) There may not be sufficient working space
 (B) Air in the space may be unbreathable due to poisonous gas
 (C) Temperature and poor ventilation may affect to worker
 (D) All of the hazardous mentioned
7. What must be considered first when planning to carryout work in a confined space?
 (A) Has the job been priced properly
 (B) Have the correct tools been arranged
 (C) Has sufficient man power been allocated
 (D) Can the work be done from the outside
8. LD₅₀ absorbed orally in rats is a < 25 mg/kg indicates
 (A) Very toxic
 (B) Toxic
 (C) Harmful
 (D) None of the above

9. Threshold limit value defined as the concentration to which the average worker could be exposed to
(A) Day by day, for 8 hours a day, 5 days a week, without suffering harm (B) One day
(C) 8 hours a day (D) One week
10. How would you recognize a hazardous substance?
(A) By a symbol on the container (B) By its smell
(C) The colour of the label on the container (D) It will be in a suitable container
11. What action should you take if you discover a fire?
(A) Leave it because you will get the blame (B) Raise the alarm
(C) Carry on working if it is safe to do so (D) Extinguish the fire without raising the alarm
12. What is a fire assembly point?
(A) The place to go when the fire alarm sounds (B) A place where the fire brigade goes to
(C) A place where fire extinguishers are kept (D) The place where the fire alarm is kept
13. What should you do if you hear the fire alarm?
(A) Ignore it because it might be someone playing around (B) Leave work for the day
(C) Evacuate the premises to a designated place of safety (D) Go towards the sound to find out what is going on
14. Why should a serious accident be reported to the enforcing authority?
(A) It helps the site find out what caused it (B) It is a legal requirement
(C) So that the site manager can see who is to be blame (D) So that the company will be held responsible
15. What immediate action should you take if you suffer an injury through carrying a load?
(A) Advise your doctor of your injury (B) Tell your supervisor or employer
(C) Tell you working companion (D) Carry on working as best as you can
16. In the context of a risk assessment, what do you understand by the term risk?
(A) An unsafe act or condition (B) Something with the potential to cause injury
(C) Any work activity that can be described as dangerous (D) The likelihood that harm from a particular hazard will occur
17. What is a hazard?
(A) Where an accident is likely to happen (B) An accident waiting to happen
(C) Something with the potential to cause harm (D) The likelihood of something going wrong
18. Why may young people be more at risk on SHE?
(A) There is no specific legislation applying to them (B) They are usually left to work alone to gain experience
(C) There is no requirement to provide PPE to young people (D) They are inexperienced and may not recognize danger

19. What colours are fire exit signs?
(A) Green and white (B) Red and yellow
(C) Red and white (D) Blue and white
20. What is the main colour on a safety sign stating that you must not do something?
(A) Blue (B) Green
(C) Red (D) Yellow

PART – B (5 × 4 = 20 Marks)
Answer ANY FIVE Questions

21. What are the duties of a safety officer?
22. What control measures are necessary in confined space?
23. What are the duties of a supervisor?
24. What is safety audit?
25. What are the advantages in good housekeeping?
26. What are advantages of job safety analysis?
27. What are the ways of control the occupational hazards?

PART – C (5 × 12 = 60 Marks)
Answer ALL Questions

28. a. Discuss about importance of safety consciousness in Indian chemical industries?

(OR)

- b. Discuss on the importance of training for workers?

29. a. Explain the factors included during the design and construction of HP reactor.

(OR)

- b. Describe the methods by which dangerous toxic chemicals can be handled?

30. a. Investigate the Bhopal accident.

(OR)

- b. What are the fire fighting equipments used in are accident? Explain.

31. a. Write in detail about the procedure for calculation of the dow fire and explosion index.

(OR)

- b. Show that nitric acid plant is light hazard plant by applying fire and explosion index.

32. a. Explain in detail about environmental pollution control.

(OR)

- b. What are the different personal protective equipments used in industry?

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