

**UNIVERSITY COLLEGE TATI (UC TATI)****FINAL EXAMINATION QUESTION BOOKLET**

COURSE CODE	: BCE 4173
COURSE	: PROCESS PLANT SAFETY
SEMESTER/SESSION	: 2 - 2023/2024
DURATION	: 3 HOURS

Instructions:

1. This booklet contains 4 questions. Answer **ALL** questions.
2. All answers should be written in answer booklet.
3. Write legibly and draw sketches wherever required.
4. If in doubt, raise up your hands and ask the invigilator.

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO

THIS BOOKLET CONTAINS 4 PRINTED PAGES INCLUDING COVER PAGE

QUESTION 1

25 MARKS

- a) Hazard can be classified into 5 groups. Explain each of the group classification. (20 marks)
- b) A process has reported FAR of 2. If an employee works a standard for 8 hours shift 300 days per year, compute the deaths per person per year. (5 marks)

QUESTION 2

25 MARKS

- a) Label all the pictograms below. (6 marks)

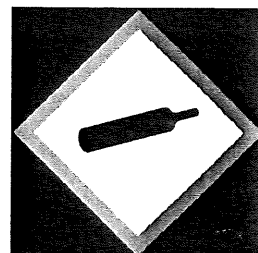
i.



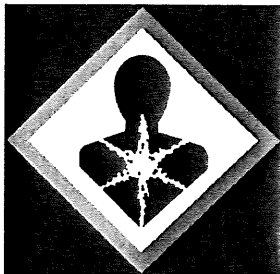
ii.



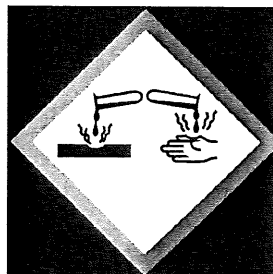
iii.



iv.



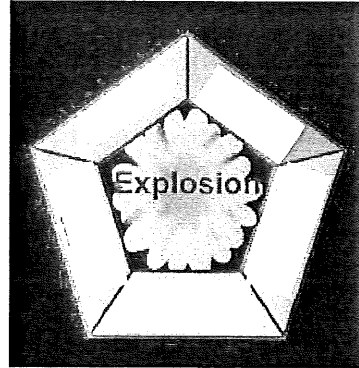
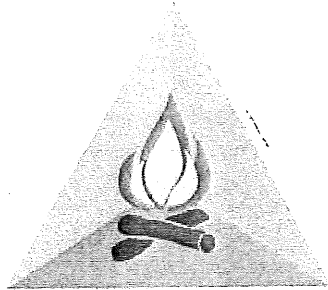
v.



vi.



- b) These symbols below represent two different hazards. (9 marks)
Classify the causes, effect and how to prevent each hazard.



- c) HAZOP is a systematic technique to identify potential hazard and operating problems
- Define hazard and operability study (HAZOP) (5 marks)
 - Distinguish the advantages and disadvantages of HAZOP (5 marks)

QUESTION 3**25 MARKS**

- a) Classify the hazard categories. (7 marks)
- b) After hazards are identified, explain how they can be prevented and control. (8 Marks)
- c) A relief system protects the process from the damaging effect of high or low pressure. A relief system removes energy from the process by discharging mass with an energy content. Identify how can high pressure develop in system. (10 marks)

QUESTION 4**25 MARKS**

- a) Safety and Health Committee Regulation 1996 is one of the regulation under occupational safety and health (OSHA).
- i. Carry out the committee members and their rules. (8 marks)
 - ii. Construct the functions of the committee. (4 marks)
- b) One of the most dangerous hazards is confined space
- i. Interpret confined space (3 marks)
 - ii. Give three (3) examples of confined space hazard (6 marks)
- c) Compute the goals of written permit program (4 marks)

-----End of question-----