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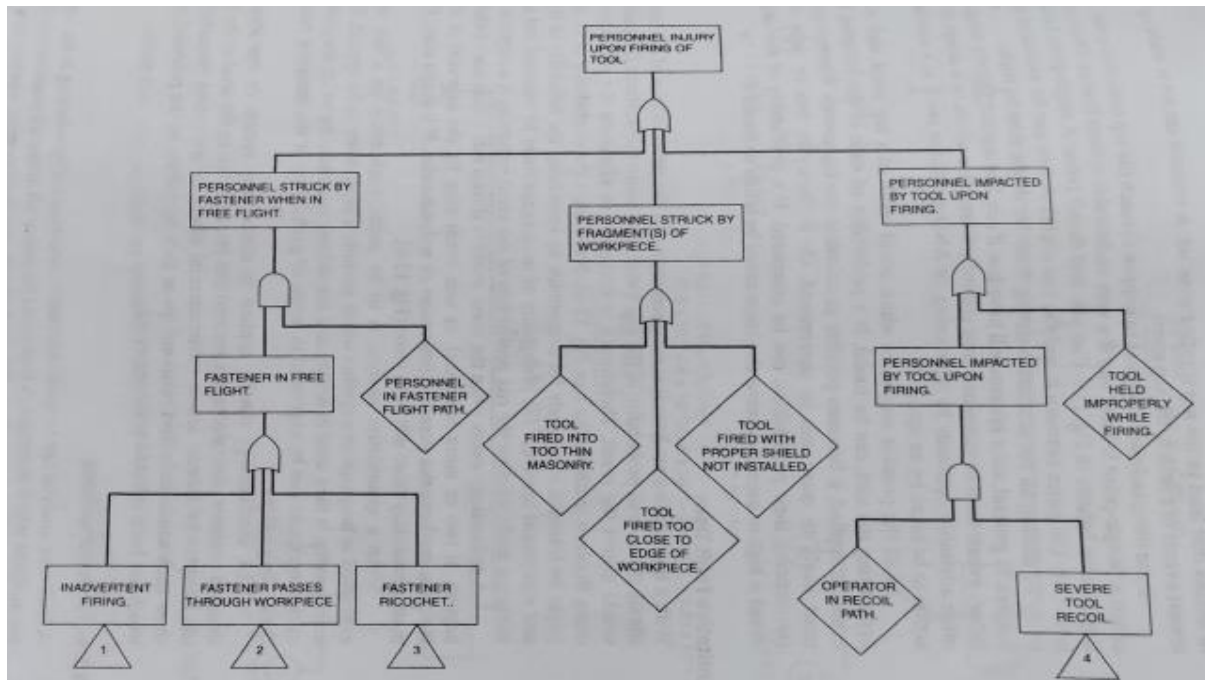
Q1. Elaborate on plant safety appraisal in the context of i) new plants ii) existing plants. (4)

Q2. Discuss the role of a safety engineer. (4)

Q3. Differentiate between safety analysis and safety inspection. (2)

Q4. Discuss the procedure of energy analysis. (4)

Q5. Discuss the significance of minimal cut set in a fault tree. Find the minimal cut set for the below fault tree?



(4)

Q6. Discuss the principle of HAZOP analysis. (2)

Q7. Elaborate on the sources of the following hazards. Also suggest 2 control methods for each. i) Pressure hazard ii) Electrical hazard (4)

Q8. Elaborate on the sources of the following hazards. Also suggest 2 control methods for each. i) Radiation hazard ii) Mechanical injuries (4)

Q9. Elaborate on the sources of fire hazard. Also suggest 2 control methods. (2)

Q10. Examine the events of the accident that occurred in Philips Petroleum Houston Chemical Complex in Pasadena, Texas in 1989. (3)

Q11. Suggest preventive steps that would have prevented the accident at Philips Petroleum Houston Chemical Complex in Pasadena, Texas in 1989. (3)

Q12. Propose hazard control methods in the order of priority that should have been implemented at the Union Carbide Plant at Bhopal. (4)

Q13. Discuss the role of the managers in ensuring an effective safety programme. (4)

Q14. Explain the significance of the following i) Bureau of Indian Standards ii) International Organization for Standardization (3)

**Q15.** Explain the significance of the following i) National Occupational safety and health ii) Occupational Safety and Health Administration **(3)**