


| Name: Enrolment No: | |  | |
|--|---|--|-----|
| USES End Semester Examination, May 2023 | | | |
| Course: Safety in Construction Program: M Tech- HSE Course Code: HSFS7010 Instructions: | | Semester: II Time : 03 hrs. Max. Marks: 100 | |
| SECTION A (5Qx4M=20Marks) | | | |
| Sr. No. | Questions | Marks | CO |
| Q 1 | Name the different types of construction projects. | 4 | CO1 |
| Q 2 | A wire rope sling of dia 24mm, calculate the safe working of a crane if the sling has its 4 falls. | 4 | CO3 |
| Q 3 | Highlight the challenges encountered in manual material handling works. | 4 | CO2 |
| Q 4 | List the control measures taken during deep excavation. | 4 | CO1 |
| Q 5 | Explain the process of the constitution of the safety committee meeting. | 4 | CO2 |
| SECTION B (4Qx10M= 40 Marks) | | | |
| Q 6 | Brief of permit to work system and its pre-requisite. In which condition, the permit-to-work system is cancelled and who has the authority to cancel it? | 10 | CO1 |
| Q 7 | Justify with an example, how the behavioral aspect is important or essential in accident minimization at construction sites. OR Justify with examples, how the workers migration tends to decrease in the safety culture. | 10 | CO3 |
| Q 8 | Highlight the safety-related provision as listed in Dock Workers Act. Explain the duties of the dock inspector. | 10 | CO2 |
| Q 9 | Create an inspection checklist for assessing confined space work conditions. | 10 | CO5 |
| SECTION-C (2Qx20M=40 Marks) | | | |
| Q 10 | Develop a lifting plan for the following activity: Work: Loading U Shape Pre-Cast Concrete Girder (Loading of U shape structure on trailer) Load to be lifted: 20 MT Location: Near to the live road and also adjacent to OHE Lines. Other information: The site condition is such a way that the crane is to be placed almost on the maximum radius and has to sway near the OHE lines. OR Create a group risk assessment for the concreting work activities (height 10 m from the ground) which includes the laying out of pipelines to pouring concrete. | 20 | CO5 |
| Q 11 | Highlight the challenges encountered while working with underground tunnelling works. Design a safe working environment for the tunnelling works including the ventilation requirements (total air and air flow rate by a blower) from the following data: Diameter of the tunnel is 5 m, Length of the tunnel is 500m, Number of air changes required /hr =8. | 20 | CO4 |