

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2022****Subject Code:3170614****Date:03-01-2023****Subject Name:Construction Engineering and Management****Time:10:30 AM TO 01:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Explain stages of project planning. **03**  
(b) Distinguish between CPM and PERT. **04**  
(c) Explain various responsibilities of an engineer in a construction project. **07**

- Q.2** (a) Which are the objectives of material management? **03**  
(b) Differentiate between standard equipment and special equipment. **04**  
(c) How critical path is determined? What is float? Explain different types of floats. **07**

**OR**

- (c) Explain factors affecting the selection of construction equipment. **07**

- Q.3** (a) Which are the various levels of a work breakdown structure? **03**  
(b) Differentiate between bar chart and milestone chart. **04**  
(c) Discuss various network rules. **07**

**OR**

- Q.3** (a) What different time estimates are used in PERT? **03**  
(b) State the advantages of the line of balance technique. **04**  
(c) Explain the logic of the precedence network. State advantages of precedence network. **07**

- Q.4** (a) State advantages of a good job layout. **03**  
(b) Describe various sources of funds for a project. **04**  
(c) Explain step by step process of resource smoothing and resource levelling. **07**

**OR**

- Q.4** (a) What data is required for updating the network of a project? **03**  
(b) Explain various BIM software. **04**  
(c) Define: Direct cost, Indirect cost, Normal time, Crash time, Normal cost, Crash cost, and Cost slope. **07**

- Q.5** (a) Differentiate between quality control and quality assurance. **03**  
(b) Explain elements of TQM. **04**  
(c) Write a short note on Occupational Safety and Health Administration (OSHA). **07**

**OR**

- Q.5** (a) Draw a line diagram of the power shovel excavator. **03**  
(b) Explain the factors affecting the cycle time of a truck. **04**  
(c) Write a short note on pile driving equipment. **07**

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