

# P P SAVANI UNIVERSITY

Seven Semester of B. Tech. Examination

November 2022

SECV4030 Construction Management & Equipment

24.11.2022, Thursday

Time: 10:00 a.m. To 12:30 p.m.

Maximum Marks: 60

## Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

## SECTION - I

- Q - 1 (a) Define: Project. Explain phases of construction Project. [05] CO 2 BTL 1/2
- Q - 1 (b) Explain Gantt bar chart. [05] 2 2

OR

- Q - 1 (a) Explain objectives and Scope of Construction Management. [05] 1 2
- Q - 1 (b) For a residential G+1 building different activities are shown below with their durations. Draw a bar chart, find out project duration. [05] 2 6

Activity Description	Duration (Days)	Designation
Foundation Layout	2	P
Excavation	5	Q
P.C.C. at Foundation	3	R
Brick Masonry in sub structure	5	S
Plinth Preparation	3	T
Earth Filling in Plinth	4	U
Slab Construction	8	V

- Q - 2 (a) Prepare a WBS on any Construction project. [05] 2 6
- Q - 2 (b) Prepare a table containing EST, EFT, LST, LFT and Float for all the activities. Highlight critical path in the network. [05] 1 5/6

Sr. No.	Activity ID	IPA	Duration in days
1	A	-	4
2	B	A	5
3	C	A	3
4	D	B	2
5	E	C	6
6	F	D	7
7	G	D	4
8	H	B, E	3
9	I	F, G, H	6

OR

- Q - 2 (a) The following table shows the various activities and their respective time estimates. Find expected activity duration. [05] 1 5/6

Activity	to	tm	tp
A	10	12	16
B	06	09	12
C	02	03	05
D	08	10	14
E	05	06	08
F	02	03	04
G	01	02	03
H	07	09	11
J	01	02	03

- Q - 2 (b) How CPM differs from PERT analysis? [05] 2 1  
 Q - 3 (a) Discuss concept of quality for construction industry. How do you define construction quality? [05] 2 2  
 Q - 3 (b) What is total quality management? To what extent is it different from quality assurance system. [05] 2 2
- OR**
- Q - 3 (a) Discuss inspection, quality control & quality assurance in construction project. [05] 2 2  
 Q - 3 (b) What is the various type of checklist & inspection reports that have to be design to ensure proper monitoring & quality assurance on the job? [05] 3 2

**SECTION - II**

- Q - 1 [05]
- (i) \_\_\_\_\_ is a self-propelled machine which is used mainly to exert a powerful tractive force for pulling another machine. [05] 3 2  
 (a) Tractor (b) Bulldozer  
 (c) Angle Dozer (d) Scraper
- (ii) \_\_\_\_\_ is useful equipment and it can be used for construction work like to clear the site of work, to make the land level, etc. 2 1  
 (a) Scraper (b) Grader  
 (c) Excavator (d) Bulldozer
- (iii) Following is (are) the component(s) of risk management 3 1  
 (a) Risk Assessment (b) Risk Control  
 (c) Risk Ranking (d) All of the above
- (iv) \_\_\_\_\_ consists of a large bucket which is attached to a tractor. 2 2  
 (a) Bulldozer (b) Scraper  
 (c) Grader (d) Escalator
- (v) The most suitable type of equipment for compaction of cohesive soils is . 1 2  
 (a) Smooth-wheeled rollers (b) Vibratory rollers  
 (c) Sheep foot rollers (d) Tampers
- (vi) The basic action involved in sheep foot rolling is 3 1  
 (a) Kneading (b) Pressing  
 (c) Tamping (d) Vibration
- (vii) \_\_\_\_\_ type of excavator is used for digging below, at or above operating level in a vertical range. 2 2  
 (a) Skimmer (b) Dragline  
 (c) Clamshell (d) Back trench
- Q - 2 (a) Discuss main components of belt conveyor system. [05] 3 2  
 Q - 2 (b) Illustrate and explain in detail various financial aspects of procuring [05] 1 4



construction equipment.

OR

- Q - 2 (a) Enlist excavating equipment. Draw a neat sketch and explain working of any two-excavating equipment. [05] 3 1
- Q - 2 (b) Describe various types of trenching machines. Which points to be kept in mind while selecting trenching equipment's? [05] 3 2
- Q - 3 (a) List and explain in brief the factors affecting the selection of construction equipment's. [05] 1 2
- Q - 3 (b) Justify and discuss the contribution of construction equipment's in construction industry. [05] 3 5
- OR
- Q - 3 (a) Explain with suitable Sketch the typical belt conveyor system, also write the functions of: 1) Feeder 2) Snub pulley. [05] 3 2
- Q - 3 (b) Enlist methods of depreciation. Explain any one method with suitable example. [05] 1 1
- Q - 4 **Attempt any one.** [05]
- (i) Give Classification of Equipment's as per the type of work equipment's performs. 1 2
- (ii) Differentiate between power shovel and dragline with suitable sketches. 3 2

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CO : Course Outcome Number

BTL : Blooms Taxonomy Level

Level of Bloom's Revised Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create