R13

Code No: 126AE

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year II Semester Examinations, May - 2017
TRANSPORTATION ENGINEERING – I
(Civil Engineering)

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

1.a) List the various types of road patterns. [2]
b) List the various requirements of Highway Ideal Alignment [3]
c) List the various assumptions in the analysis of safe Overtaking Sight Distance. [2]
d) Calculate the extra width required for a two lane highway having a horizontal curve of radius 200m,if the design speed is 80 Kmph. [3]
e) Draw a neat sketch of Condition and Collision diagram. [2]
f) Define traffic volume and traffic density and speed. [3]
g) List the factors to be considered in the design of intersection at grade. [2]
h) List the various types of on street and off street parking facilities. [3]
i) List the various tests to be conducted to evaluate the strength properties of soils [2]
j) Differentiate between Tack Coat and Prime Coat. [3]

PART - B

(50 Marks)

2.a) Discuss in detail ,the various factors controlling the highway alignment with sketches.
b) What is the necessity of Realignment? List and explain the various steps in Realignment. [5+5]

OR

3.a) What are the various recommendations of Jayakar Committee? How were these implemented?
b) What are the various methods of classifying roads? Briefly outline the classification of urban roads. [5+5]

4.a) Explain PIEV Theory and the total reaction time of driver .
b) Calculate the length of transition curve using the following data:
Design speed =65 Kmph, Radius of circular curve = 220m, pavement width including extra widening = 7.5 m, allowable rate of introduction of super elevation (pavement is rotated about the centerline) is 1 in 150. [5+5]

OR

5.a) With the help of a neat sketch, explain the attainment of super elevation in the field.
b) Calculate the length of vertical valley curve required between -1/30 and +1/25 grades for a speed of 80 Kmph to satisfy comfort and headlight sight distance requirements. [5+5]

6.a) Identify and explain by grouping the vehicular characteristics which affect the various elements of road design.

b) Spot speed studies were carried out at a certain stretch of a highway with mixed traffic flow and the consolidated data collected are given below. [5+5]

Speed range, kmph	No of vehicles observed
0-10	12
10 – 20	18
20 - 30	68
30 - 40	89
40 - 50	204
50 - 60	255
60 - 70	119
70 - 80	43
80 - 90	33
90 – 100	9

OR

7.a) Write a note on various road user characteristics affecting the traffic.

b) Briefly explain the various objectives and methods of O and D studies. [5+5]

8.a) Briefly explain the various design factors to be considered in the design of rotary.

b) With neat sketches, explain the Different types of traffic Islands and conflicts at Intersections. [5+5]

OR

9.a) List and explain the various advantages and disadvantages of Rotary.

b) List the various advantages of at grade and Grade separated Intersections. [5+5]

10.a) List the specifications, materials and construction steps for laying Bituminous concrete.

b) Explain briefly the importance and requirements of Highway Drainage. [5+5]

OR

11.a) Discuss the desirable properties of Coarse Aggregates. List the various laboratory test conducted to find these properties.

b) Explain how the soils are classified based on HRB soil classification system. [5+5]

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5.a) Determine the safe overtaking sight distance required for a two lane, two-way traffic road, given the speeds of overtaking and overtaken vehicles are 100 kmph and 70 kmph respectively. The acceleration of overtaking vehicle is 2.4 kmph/sec, spacing between vehicles is 20m, reaction time of driver is 2 sec and speed of vehicle coming in the opposite direction is 80kmph.

b) Find out the minimum length of transition curve required and the shift required to join the transition curve with circular curve of radius 200m, for a road passing through rolling terrain. Given design speed 65kmph, carriage way width 7.5m, rate of super elevation 1 in 150 and the road is rotated about the center line to achieve super elevation. [5+5]

6. What are the details collected in origin and destination surveys? Explain the most commonly adopted methods of O&D survey. [10]

OR

7. What are the objectives of road markings and road signs? Classify road markings and traffic signs giving two examples in each category. [10]

8. What are the various types of at-grade intersections? Describe them with suitable sketches. Mark the conflict points at T-intersection and four-legged intersection (for two-way traffic in both directions). [10]

OR

9.a) What are the purposes of channelization? What are the salient features of channelizing islands?

b) Explain the design considerations for a rotary. Discuss the advantages and limitations of a rotary intersection. [5+5]

10. Explain the steps in the construction of gravel roads and Water bound macadam roads. [10]

OR

11. What is the function of joints in cement concrete pavements? Write short notes on: Expansion joints, Contraction joints and Warping joints. [10]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year II Semester Examinations, May - 2017
TRANSPORTATION ENGINEERING – I
(Civil Engineering)

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

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PART - B

(50 Marks)

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b) What is the necessity of Realignment? List and explain the various steps in Realignment. [5+5]

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3.a) What are the various recommendations of Jayakar Committee? How were these implemented?
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OR

5.a) With the help of a neat sketch, explain the attainment of super elevation in the field.
b) Calculate the length of vertical valley curve required between -1/30 and +1/25 grades for a speed of 80 Kmph satisfying [illegible] sight distance requirements. [5+5]

R16

Code No: 137BP

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year I Semester Examinations, February/March - 2022
CONSTRUCTION TECHNOLOGY AND MANAGEMENT
(Civil Engineering)

Time: 3 Hours **Max. Marks: 75**

Answer any Five Questions
All Questions Carry Equal Marks

- - -

1.a) Explain in detail project management in construction.
b) Describe the stages of planning in construction management. [8+7]

2. How can construction management education improve the efficiency of the construction industry in the future? [15]

3.a) Compare the characteristics and application of different types of earth excavating equipment.
b) Mention the various types of earthwork equipment and their uses keeping in view of economic considerations. [8+7]

4. Elaborately discuss the various material handling equipment (any Four) and discuss their specific purpose in detail. [15]

5. Explain the importance of network analysis techniques for effective project management. [15]

6. Explain the meaning of cost control and its importance. [15]

7.a) Briefly explain the various steps involved in optimization of cost.
b) Explain the approaches to improve safety in construction. [8+7]

8. Disputes in construction contracts are inevitable. Discuss the statement and write an explanatory note on powers of arbitration. [15]

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Code No: 137BP

R16

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, January/February - 2023

CONSTRUCTION TECHNOLOGY AND MANAGEMENT

(Civil Engineering)

Time: 3 Hours **Max.Marks:75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

1.a)	What is project management?	[2]
b)	List the stages of project life cycle.	[3]
c)	How a decision over equipment impacts an activity?	[2]
d)	List different earthwork operations.	[3]
e)	What is Time Value of Money?	[2]
f)	What is cost benefit ratio?	[3]
g)	Spot the difference between AutoCAD and Revit software.	[2]
h)	Briefly explain types of estimation.	[3]
i)	What is administrative approval?	[2]
j)	Elucidate why store management is important.	[3]

PART – B

(50 Marks)

2.a)	List different stages in construction of a simple building.	
b)	Explain organization structure for a project.	[5+5]
	OR	
3.	Explain the need for project management.	[10]
4.a)	Describe various criteria for deciding two –shift or three-shift working in a construction project.	
b)	Discuss the factors affecting the selection of equipment in construction for efficiency in construction project by achieving environment and sustainability.	[5+5]
	OR	
5.a)	Explain the procedure for construction of coffer dam with a neat sketch.	
b)	Discuss different activities an excavator can perform.	[6+4]

6. A project schedule has the following characteristics Construct network diagram
a) Find the estimated duration and variance
b) Find the critical path and expected project completion time
c) What is the probability of completing the project on or before 22 weeks. [10]

Activity	Predecessor	Duration (weeks)		
		t_o	t_m	t_p
A	-	5	6	7
B	-	1	3	5
C	-	1	4	7
D	A	1	2	3
E	B	1	2	9
F	C	1	5	9
G	C	2	2	8
H	E, F	4	4	10
I	D	2	5	8
J	H, G	2	2	8

OR

7.a) How would you schedule a project of constructing a research laboratory.
i) List out the activities
ii) Construct the network diagram.
iii) Find the project completion time
b) Explain the types of network diagrams. [6+4]

8.a) Write the application of BIM.
b) How do Engineers are trained in manging these autonomous applications in construction. [5+5]

OR

9. A Project has activities with the following normal and crash times and cost. Determine a crashing scheme for the above project so that the total project time is reduced by 3 weeks. [10]

Activity	Predecessor Activity	Normal time (Weeks)	Crash Time (Weeks)	Normal Cost (Rs.)	Crash Cost (Rs.)
A	-	4	3	8000	9000
B	A	5	3	16000	20000
C	A	4	3	12000	13000
D	B	6	5	34000	35000
E	C	6	4	42000	44000
F	D	5	4	16000	16500
G	E	7	4	60000	72000
H	G	4	3	2000	5000

10. Elucidate PPP. List the types of PPP. [10]

OR

11.a) Write the process of tendering with a neat sketch.
b) What is EMD? Explain why? [6+4]

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, July/August - 2022

CONSTRUCTION TECHNOLOGY AND MANAGEMENT

(Civil Engineering)

Time: 3 Hours **Max. Marks: 75**

Answer any Five Questions

All Questions Carry Equal Marks

1.a) Explain briefly the types of construction projects.

b) What is planning and why planning is very important in construction management. [8+7]

2. How can construction management education improve the efficiency of the construction industry in the future? [15]

3.a) Describe the role of construction equipment's in economical completion of large construction projects.

b) List the various classification of construction equipment and explain one of them. [8+7]

4.a) Name the equipment needed for compacting concrete and explain their uses in detail.

b) What are the various factors affecting while selecting construction equipment's? [8+7]

5. What do you mean by PERT? What is its significance? Explain briefly. [15]

6. Write down the advantages of network techniques over conventional techniques. [15]

7.a) Briefly explain the various steps involved in Building Information modelling.

b) Explain different types of safety measures in construction. [8+7]

8. What is Muster roll? Explain the procedure of maintaining Muster roll. [15]

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Code No: 137BP

R16

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, March - 2021

CONSTRUCTION TECHNOLOGY AND MANAGEMENT

(Civil Engineering)

Time: 3 Hours **Max. Marks: 75**

Answer any Five Questions

All Questions Carry Equal Marks

1.a) Elaborate various phases involved in construction project management?

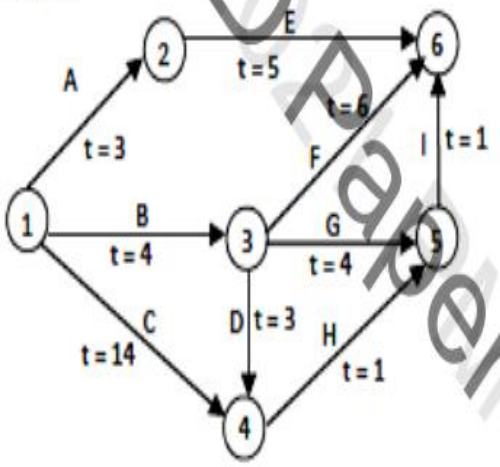
b) Explain the roles of planning techniques to make the decisions for a new project? [8+7]

2.a) Describe various Mechanized Construction Equipment available in Construction.

b) Explain the construction procedure of piles. [8+7]

3.a) Differentiate between CPM and PERT.

b) The network shown below has the estimated duration for each activity marked. Determine the total float for each activity and establish the critical path along with total duration of the project. [5+10]



4.a) What are the Principles of Safety? Explain in detail about personal safety and fire protection.

b) Define crashing of activities, rules for crashing and draw the corresponding graphs to explain direct cost, indirect cost(overhead cost), crashing cost and total cost. [8+7]

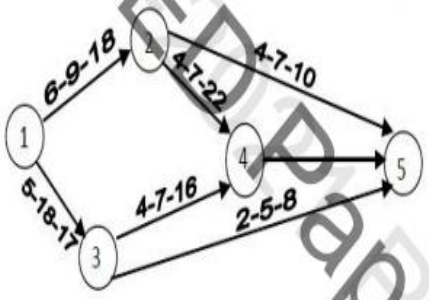
5.a) What is a bid? How is it submitted? What is the process and types of bidding? How do the presentation and evaluation of bid take place?

b) Define material management. Explain codification and standardization in stores management. [8+7]

6. Determine the minimum cost and optimum duration for the following project. The data of each activity of network is given in the table. Indirect cost is Rs.4000/week. [15]

ACTIVITY	NORMAL		CRASH	
	TIME (month)	COST(Rs)	TIME (month)	COST(Rs)
0-1	3	5000	2	5500
1-3	14	10000	11	13000
1-2	7	6000	4	9000
2-3	9	11000	6	18000
3-4	4	9000	3	12000
4-5	3	6000	2	7800

7.a) For the network shown on the following figure the time estimates (in days) each for activity are mentioned. Determine the probability of completing the Project in 35 days.



b) Discuss the guidelines for constructing a Project Network. [7+8]

8.a) Discuss about the process of Tendering.
b) Write about the different types of dispute resolution methods.
c) List the rules to be followed in recording measurements in M-book. [5+5+5]

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