

PRN No.

PAPER CODE V315-224B(EST)

(AY:2025-26) December 2025 (ENDSEM) EXAM

TY/ (SEMESTER - I)

COURSE NAME: Construction Management  
T.Y -Pattern 2023

Branch: Civil  
Engineering

COURSE CODE: CV31234 B

Time: [1Hr 30 Min]

[Max. Marks: 40]

(\*) Instructions to candidates:

- 5) Figures to the right indicate full marks. Use of scientific calculator is allowed
- 6) Use suitable data wherever required
- 7) All questions are compulsory. Solve any two sub question each from Questions 1 and 2
- 8) Solve any one sub question (2 marks) from Questions 3 ,4 ,5 and 6 and sub question of 4 marks is compulsory from questions 3,4,5,and 6

Q. No.	Question Description	Max. Marks	CO mapped	BT Level																																																												
Q.1	a) A network of a project is given in the figure. Calculate the total duration of the project and total slack of each activity  	[4]	CO1	Apply																																																												
	b) Consider the details of a project. Draw a network and determine the critical path and duration of the project  <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Activity</th> <th>(<math>t_o</math>)</th> <th>(<math>t_n</math>)</th> <th>(<math>t_p</math>)</th> </tr> </thead> <tbody> <tr><td>(1-2)</td><td>3</td><td>6</td><td>10</td></tr> <tr><td>(1-3)</td><td>6</td><td>7</td><td>12</td></tr> <tr><td>(1-4)</td><td>7</td><td>9</td><td>12</td></tr> <tr><td>(2-3)</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>(2-5)</td><td>8</td><td>12</td><td>17</td></tr> <tr><td>(3-6)</td><td>10</td><td>12</td><td>15</td></tr> <tr><td>(4-7)</td><td>8</td><td>13</td><td>19</td></tr> <tr><td>(5-8)</td><td>12</td><td>14</td><td>15</td></tr> <tr><td>(6-7)</td><td>8</td><td>9</td><td>10</td></tr> <tr><td>(6-9)</td><td>13</td><td>16</td><td>19</td></tr> <tr><td>(8-9)</td><td>4</td><td>7</td><td>10</td></tr> <tr><td>(7-10)</td><td>10</td><td>13</td><td>17</td></tr> <tr><td>(9-11)</td><td>6</td><td>8</td><td>12</td></tr> <tr><td>(10-11)</td><td>10</td><td>12</td><td>14</td></tr> </tbody> </table>	Activity	( $t_o$ )	( $t_n$ )	( $t_p$ )	(1-2)	3	6	10	(1-3)	6	7	12	(1-4)	7	9	12	(2-3)	0	0	0	(2-5)	8	12	17	(3-6)	10	12	15	(4-7)	8	13	19	(5-8)	12	14	15	(6-7)	8	9	10	(6-9)	13	16	19	(8-9)	4	7	10	(7-10)	10	13	17	(9-11)	6	8	12	(10-11)	10	12	14	[4]	CO1	Apply
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c) Describe Milestone chart with an appropriate figure.	[4]	CO1	Apply																																																													
Q2	a) Apply the concept of work study to identify how productivity can be improved in a concreting of slab of a construction project.	[4]	CO2	Apply																																																												

	b) Prepare a line chart chart for the task of concrete mixing and pouring, and use it to suggest possible improvements.	[4]	CO2	Apply
	c) Construct a two-handed process chart for the task of bricklaying, indicating how both hands are used during the placement of a brick and application of mortar.	[4]	CO2	Apply
Q3	a) Describe the basic objectives of risk management that guide decision-making in project planning. OR	[2]	CO3	Understand
	b) Explain the any two types of risks encountered in construction projects	[2]	CO3	Understand
	c) Describe how cost benefit analysis helps in understanding the effect of uncertainty on project outcomes.	[4]	CO3	Understand
Q4	a) Discuss the tendering procedure OR	[2]	CO4	Understand
	b) Describe the types of tender documents used in civil engineering projects.	[2]	CO4	Understand
	c) Assume a construction brick dealer that faces demand for 5,000 bricks per year, and that it costs 15,000 to have the bricks shipped to the dealership. Holding cost is estimated at 500 per brick per year. How many times should the dealer order, and what should be the order size if lead time is 12 days?	[4]	CO4	Apply
Q.5	a) Describe the main types of construction equipment used for earthwork, concreting, and material handling. OR	[2]	CO5	Understand
	b) Differentiate between fixed costs and variable costs associated with construction equipment.	[2]	CO5	Understand
	c) A construction machine was purchased at Rs. 22000. It had an expected useful life of 5yrs and salvage value at the end of five years as Rs. 2000. The machine was expected to work for 2000 hours in a year. Compute yearly depreciation of the machine and the salvage/book value for each year. Work out the depreciation each year for the machine using the straight line method.	[4]	CO5	Apply
Q.6	a) Summarize the main objectives of implementing MIS in an organization. OR	[2]	CO6	Understand
	b) State the role of ERP in Materials Management System.	[2]	CO6	Understand
	c) Explain how MIS supports decision-making at different levels of management.	[4]	CO6	Understand