Registration No.: | | | | | | | | | | |

Total Number of Pages: 03 **Course: B.Tech**
Sub_Code: RCI7D003

7th Semester Regular/Back Examination: 2024-25
SUBJECT: Estimating, Costing and Professional Practice
BRANCH(S): Civil Engineering
Time: 3 Hours
Max Marks: 100
Q.Code: R323

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.
The figures in the right-hand margin indicate marks.

Part-I

Q1 **Answer the following questions:** **(2 x 10)**

a) Write the difference between surface dressing and surface excavation.
b) Calculate material for 20 mm thick plastering in wall for 100 sqm.
c) Calculate material for neat cement flooring or skirting for 100 sqm having thickness = 1.5 mm
d) Write the difference between earnest money deposit and security money deposit.
e) How the following items of work are measured.
a) Plastering b) Brickwork in supper structure c) Flooring d) Coursed rubble Masonry
f) Write down the out-turn of a person working in the brickwork with cement mortar in foundation and plinth and Lime concrete (1:2:4) respectively.
g) Write the difference between R chart and C chart.
h) What do you understand by "the probability of finishing an activity within the scheduled time"?
i) How the crashing cost effect the optimize time of project completion?
j) Write the difference between PERT and CPM.

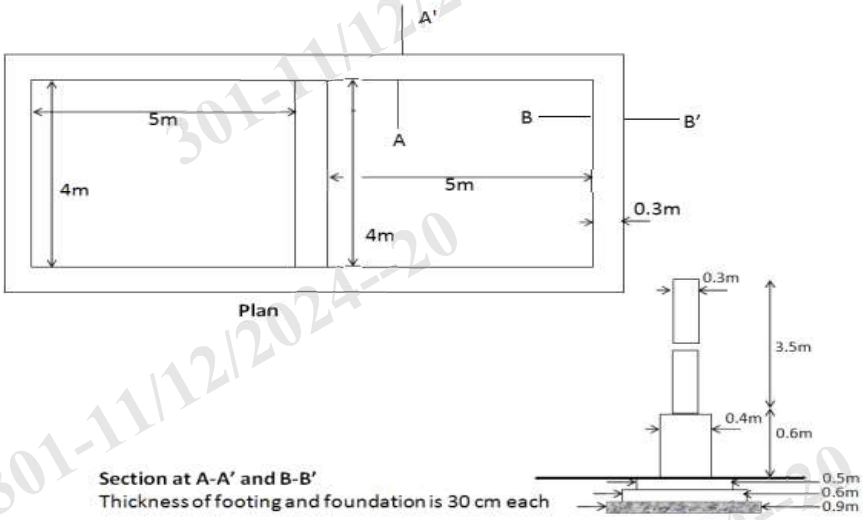
Part-II

Q2 **Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)** **(6 x 8)**

a) Define different type of float and derive the relationship among them.
b) Prepare the analysis of rate for cement concrete in proportion (1:2:4).
c) Describe the method to Quality Control by Statistical Methods.
d) Write the different construction safety requirement for construction industry.
e) Prepare the analysis of rate for 12 mm thickness plaster (1:6).
f) Distinguish between the general specification and detailed specification. Write down the general specifications for flooring, doors & windows in different class of Building.
g) Describe about the types of estimates, their advantages and disadvantages

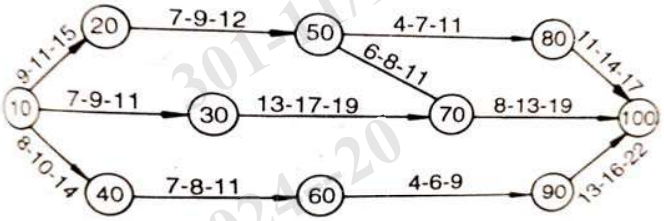
h) Estimate the quantities of following items of work for a building as shown in figure using center line method.

I. Earthwork excavation in foundation
II. Cement concrete in foundation
III. Brickwork in foundations

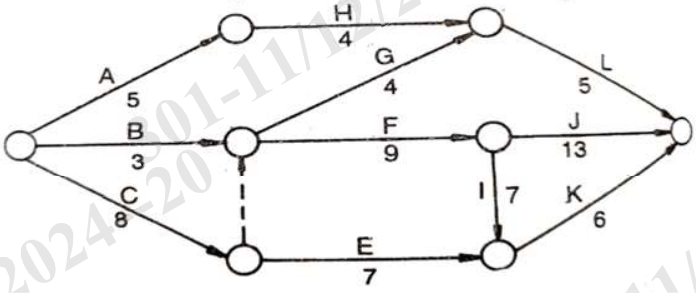


i) Write the different content of a typical tender notice.

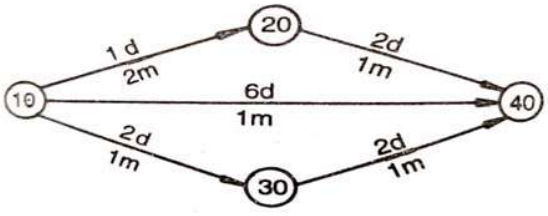
j) Calculate the critical path of the following network using PERT.



k) Calculate different type of float for the following network.



l) Determine the aggregate resources requirement, period by period for the network given below. The figures over the arrow indicate the duration of the activities and figures below the arrow indicate requirement of mason for the project. Use resource smoothening technique to maintain the mason requirement of 2.



Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

Q3 Consider a beam of clear length of 6 m, 3500 mm wide by 600 mm depth. The reinforcement details are as per following: **(16)**

At support 4-20 diameter bar at top and 2-20 diameter bar at bottom

At mid-span 2-20 diameter bar at top and 2-16 diameter and 2-20 diameter bars at bottom. The 8 mm dia stirrups are placed @ 180 mm c/c. Consider clear cover of 25 mm. Calculate the quantity of reinforcement in the beam

Q4 Prepare a detailed estimate of a R.C.C. roof slab of 4 m clear span & 6 m long. R.C.C. work including centering & shuttering, steel reinforcement in detail shall be taken separately. Also prepare a schedule of bars. Bearing 150 mm & depth of slab 120 mm with clear cover 20 mm, assume other data. **(16)**

Q5 The interdependencies of the activities are given below. Draw the network and determine the completing the project in 35 days **(16)**

Activity	A	B	C	D	E	F	G
Preceding activities	—	—	A	B	A	B	C & D
Succeeding activities	C & E	D & F	G	G	—	—	—

Activity time		Normal distribution function data	
Activities	Three time estimate	Z	P(%)
A	6-9-18	0.8	78.81
B	5-8-17	0.9	81.59
C	4-7-22	1.0	84.13
D	4-7-16	1.1	86.43
E	4-7-10	1.2	88.49
F	2-5-8		
G	4-10-22		

Q6 The network for a project, the data for the duration and the costs of each activity are given in Figure and Table respectively. The indirect cost of the project is Rs. 2000 per week. Draw the time scaled version of the network at each stage of crashing **(16)**

Activity	Normal Duration (Weeks)	Normal cost (Rs)	Crash Duration (Weeks)	Crash Cost (Rs)
1-2	4	4000	2	12000
2-3	5	3000	2	7500
2-4	7	3600	5	6000
3-4	4	5000	2	10000