



**Shri Shankaracharya Institute of Professional Management & Technology**  
**Department of Civil Engineering**

Class Test – I Session: January - June, 2022 Month – April  
**Semester – 6<sup>th</sup> Subject – EEE&C, Code – C020613(020)**  
 Time Allowed: 2 hrs Max Marks: 40

**Note: -Question (a) is compulsory. Attempt any two from b, c and d form Part I and Part II.**

Q. No.	Questions	Marks	Levels of Bloom's taxonomy	COs
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**Part- I**

(a) Calculate the extra length of following bars.  
 (a) Straight Bars (b) Bent up Bars 45 Degree [4] Apply CO2

(b) Calculate Quantity Materials of RCC Beam of 5.6 m clear span and 350 cm x 70 cm section. Work out the quantity of steel and RCC in Beam and also prepare BBS. [8] Apply CO2

(c)	Distance in Meter	RL of Ground	RL of Formation	[8]	Apply	CO2
	1000	51.00	52.00			
	1040	50.90	↓ Downward Gradient of 1 in 200 ↑			
	1080	50.50				
	1120	50.80				
	1160	50.60				
	1200	50.70				
	1240	51.20				
	1280	51.40				
	1320	51.30				
	1360	51.00				
	1400	50.60				

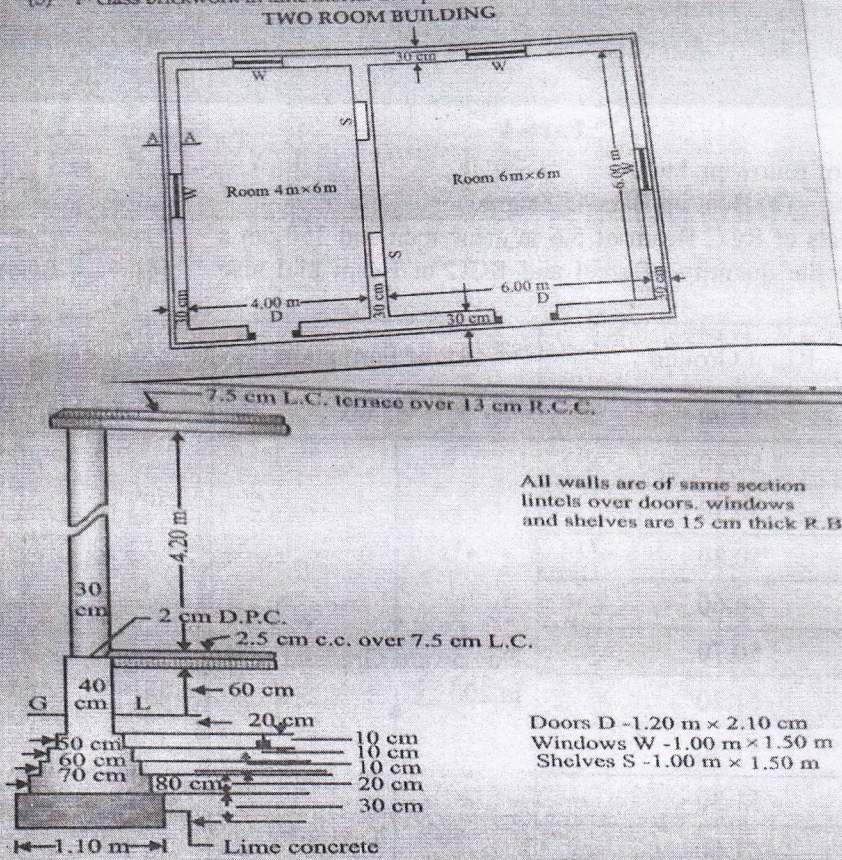
Formation width of road is 10 m. Side slope are 2:1 in banking and 1.5:1 in cutting.



(d)

Estimate the quantities of the following items of a two room building from the given plan and section.

- (1) Earthwork in excavation in foundation.
- (2) Lime concrete in foundation.
- (3) I<sup>st</sup> class brickwork in cement mortar 1 : 6 in foundation and plinth.
- (4) 2.5 cm C.C. damp proof course.
- (5) I<sup>st</sup> class brickwork in lime mortar in superstructure.



[8] Apply CO2

**Part- II**

(a)	Write Unit of measurement. 1. Surface Dressing 2. Cement concrete bed 3. Cutting of Angles, Tees and Plates 4. Rolled Steel Joist	[4]	Understand	CO1
(b)	Differentiate Between Revised and Supplementary Estimate.	[8]	Analyze	CO1
(c)	Prepare a preliminary estimate of a double storeyed building having carpet area of 1800 sq. m. It may be assumed that 30% of the built-up area will be taken by corridors verandah etc, and 10% of the area to be occupied by walls. Given plinth area rate Rs. 2000 per sq. m. Extra of water supply and sanitary - 5% of building cost, electrical installation - 12.5% of building cost and contingencies. - 10%	[8]	Apply	CO1
(d)	Describe the following terms 1. Administrative Approval 2. Technical Sanction 3. Expenditure Sanction 4. Work Charge Establishment	[8]	Understand	CO1

26/04/22  
8-I



**Shri Shankaracharya Institute of Professional Management & Technology**

**Department of Civil Engineering**

Class Test – I, Session: Jan- June 2022

Semester – 6<sup>th</sup> Subject – Structural Engineering Design-II (C020611 (020))


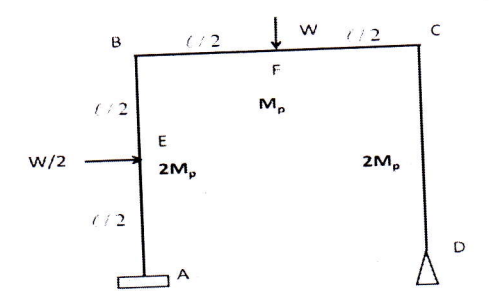
Time Allowed: 2 hrs.

Max Marks: 40

Note: (I) Part (a) of each question is compulsory, solve any two parts from (b), (c) & (d)  
 (II) Use of IS 800:2007 and steel table is permitted.

Q. No.	Questions	Marks	Levels of Bloom's taxonomy	COs
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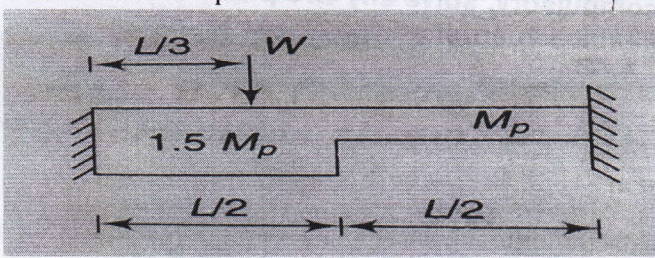
**Part-1**

A.	Define Shape factor. Also find the value of shape factor for triangular section.	[4]	Understand	CO1
B.	Determine the collapse load for the below continuous beam. The moment capacity of the $M_p$ throughout. The length of each span AB, BC and CD is L. 	[8]	Analyze	CO1
C.	Find the collapse load for the frame shown in figure. 	[8]	Analyze	CO1
D.	Explain the Design Philosophies.	[8]	Understand	CO1

**Part- II**

A.	Define the term Connection and Explain its type.	[4]	Understand	CO2
B.	Calculate the strength of a 16mm diameter bolt of grade 4.6 for the following cases. The main plates to be jointed are 12 mm thick a) Lap Joint b) Single cover butt Joint; the cover plate being 8 mm thick c) Double cover butt joint; each of the cover plate being 6 mm thick	[8]	Analyze	CO2



C.	<p>A single bolted double cover butt joint is used to connect two plates 6mm thick. Assuming the bolts of 20mm diameter at 60mm pitch calculate the efficiency of the joint. Use 410 MPa plates and 4.6 grade bolts.</p>	[8]	Apply	CO2
D.	<p>Determine the collapse load for a continuous beam shown in figure.</p> 	[8]	Apply	CO2

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S-I

26/04/22

S-I



**Shri Shankaracharya Institute of Professional Management & Technology**

Department of Civil Engineering

Online Class Test – I Session: Jan – June, 2022 Month – April

SSIPMT



Semester – 6th Subject – Construction Engineering &amp; Management

Code – C000615(020)

Time Allowed: 2 hrs. Max Marks: 40

*Note: - In Part I & II, Question A is compulsory and attempt any two from B, C & D.*

Q. No.	Questions	Marks	Levels of Bloom's taxonomy	CO's
<b>Part I</b>				
A.	What is meant by the term project? Explain briefly the phases of project?	[4]	Understand	CO1
B.	Define construction project. Discuss the features and the types of various construction project.	[8]	Understand	CO1
C.	Give a detailed explanation of material planning and the process of procurement?	[8]	Understand	CO1
D.	Write short note on: 1. Cash flow 2. Histograms 3. Line of balance 4. Earned value	[8]	Understand	CO1
<b>Part II</b>				
A.	Write the various duties of client.	[4]	Understand	CO2
B.	Explain the detailed discussion about pre-tendering and pre construction planning?	[8]	Understand	CO2
C.	Explain the terms: 1. Work break down structure 2. Assessment of work content 3. Estimating duration 4. Activity Utility data	[8]	Understand	CO2
D.	Write short note on: 1. Bar chart 2. Resource constraints 3. Resource allocation 4. Gantt chart	[8]	Understand	CO2

**Shri Shankaracharya Institute of Professional Management & Technology**

**Department of Civil Engineering**

**Class Test – I Session: Jan – June, 2022 Month – April**

**Semester – 6th Subject – Environment Engineering Code – C020612(020)**

**Time Allowed: 2 hrs. Max Marks: 40**

*Note: - In Part I attempt any 4 questions out of 5 and In Part II all questions are compulsory.*

**SSIPMT**



Q. No.	Questions	Marks	Levels of Bloom's taxonomy	CO's												
<b>Part I</b>																
1)	Mention the necessity and importance of water supply scheme	[4]	Understand	CO1												
2)	Discuss the factors that affect per capita demand for any area in detail	[4]	Understand	CO1												
3)	Outline the different chemical water quality parameters giving brief explanation with reference to acceptable and cause of rejection limits.	[4]	Analyze	CO1												
4)	What do you mean by "Fire Demand"? For a city having a population of 1,35,000, obtain the fire demand in MLD using National Board Formula.	[4]	Apply	CO1												
5)	Briefly explain the different types of water demand for designing water supply scheme for any city	[4]	Analyze	CO1												
<b>Part II</b>																
1)	A 100 ml sample of water having pH of 11.5 is titrated with 0.02 N H <sub>2</sub> SO <sub>4</sub> . The sample attains a pH of 8.3 after 5ml of acid is added to it. An additional 4 ml of acid is required to bring the pH of sample to 4.5. What are the types of alkalinities present in the water sample and also determine the concentration of each in mg/L as CaCO <sub>3</sub>	[8]	Apply	CO2												
2)	A water supply scheme is to be designed for a city with population of 1,95,000. If average water consumption is 220 lpcd, Calculate: - a) Maximum Daily demand b) Maximum Hourly demand c) Coincident draft	[8]	Analyze	CO2												
3)	Following table represents the census data for a city: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Year</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>1935</td> <td>25,000</td> </tr> <tr> <td>1945</td> <td>28,000</td> </tr> <tr> <td>1955</td> <td>34,000</td> </tr> <tr> <td>1965</td> <td>42,000</td> </tr> <tr> <td>1975</td> <td>???</td> </tr> </tbody> </table> <p>If Population at the end of year 2005 is 75,000, Calculate:                      a) Population for the year 1975                      b) Population for the year 2015                      Use Incremental Increase Method</p>	Year	Population	1935	25,000	1945	28,000	1955	34,000	1965	42,000	1975	???	[8]	Apply	CO2
Year	Population															
1935	25,000															
1945	28,000															
1955	34,000															
1965	42,000															
1975	???															



Note: - In Part I, II and III, Question A is compulsory and attempt any two from B, C & D.

Q. No.	Questions	Marks	Levels of Bloom's taxonomy	CO's
<b>Part- I (15 Marks)</b>				
A.	Define surface index and specific surface of aggregate.	[3]	Understand	CO1
B.	What is hydration of cement? Explain structure of hydrated cement with neat sketch.	[6]	Understand	CO1
C.	Write short notes on: (i) Surface index (3) (ii) Quality of mixing and curing water (3)	[6]	Understand	CO1
D.	Briefly explain the alkali aggregate reaction and factors promoting its reaction.	[6]	Understand	CO1
<b>Part- II (15 Marks)</b>				
A.	Explain segregation and bleeding in terms of fresh concrete. How they differ?	[3]	Understand	CO2
B.	Briefly explain the effect of different mineral admixtures on properties of fresh concrete.	[6]	Understand	CO2
C.	Define workability as per IS 6461 part (VII) and explain the factors affecting workability.	[6]	Understand	CO2
D.	Classify admixtures and explain their function.	[6]	Understand	CO2
<b>Part- III (10 Marks)</b>				
A.	<b>Design a concrete mix of M-25 grade (RCC) work</b> Design Stipulations For Proportioning are: Grade M25, Type of Cement- PPC, Max. Size of Aggregate – 20 mm (Angular), Exposure condition – Severe; Slump- 75 mm; Aggregate type- crushed; Admixture – Super plasticizer; Water absorption of fine aggregate- 1%; Water absorption of coarse aggregate- 0.5%. Specific gravity of fine aggregate- 2.65; Specific gravity of coarse aggregate- 2.74; Specific gravity of cement- 2.88; Specific gravity of super plasticizer – 1.145; Zone of fine aggregate – II; Surface moisture in coarse and fine aggregate – Nil	[10]	Apply	CO4