Shri Shankaracharya Institute of Professional Management & Technology
Department of Civil Engineering
Class Test – I
Session: Jan-June 2023

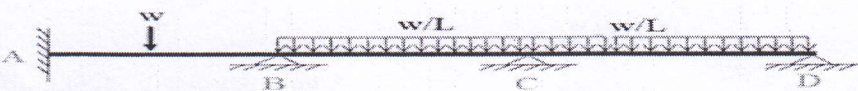**Semester – 6th   Subject –Structural Engineering Design-II   Subject Code:- C020611(020)**

Time Allowed: 2 hrs.   Max Marks: 40

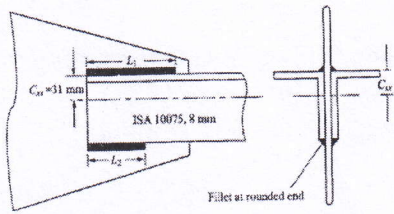*Note: - In Part I & II, All Question is compulsory and attempt any two from B, C & D.*

Q. No.	Questions	Marks	Levels of Bloom's taxonomy	COs
	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 Mp throughout. The length of each span AB, BC and CD is L.	[8]	Analyze	CO1
C.	Explain the various type of structural steel that are use in steel structure.	[8]	Understand	CO1
D.	Explain the Design Philosophies.	[8]	Understand	CO1
	Part- II			
A.	Difference between welded and bolted connections.	[4]	Understand	CO2
	Two ISF section 200mm X 10mm each and 1.5m long are to be jointed to make a member length of 3.0m. Design a butt joint with the bolts arranged in the diamond pattern. The flat is supposed to carry a service load 300KN. Steel is of grade Fe410. 20mm diameter bolts of grade 4.6 are used to make the connections. Also, determine the net tensile strength of the main plate and cover plate.	[8]	Analyze	CO2
C.	A tie member of a roof truss consists of 2 ISA 100 x 75, 8mm.the angles are connected to either side of a 10mm gusset plates and the member is subjected to a working pull of 300KN.Design the weld connection. Assume connections are made in the workshop.	[8]	Analyze	CO2
D.	Explain the different types of bolts and different types of joint.	[8]	Understand	CO2

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

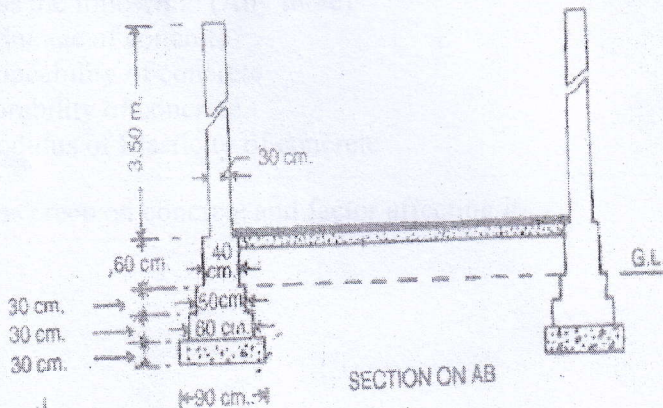| Class Test – I	Session- Jan-June, 2023	Month-April
Sem- 6th	**Subject- Disaster Management**	**Code- C000604(094)**
Time Allowed: 2 hrs		Max Marks: 40

Note: - Question Q1 is compulsory. Attempt any 2 questions from Q2, Q3 and Q4.

Q.N.	Questions	Marks	Levels of Bloom's taxonomy	COs
	PART-I			
Q1	Differentiate between natural disaster and man-made disaster?	[4]	Analyze	CO1
Q2	Define hydrological disaster. Describe the guideline for flood prevention.	[8]	Understand	CO1
Q3	Describe the terminologies related to earthquake and causes of earthquake.	[8]	Understand	CO1
Q4	Discuss the factors of soil erosion? Explain in brief about conservation measures of soil erosion.	[8]	Understand	CO1
	PART-II			
Q1	Define disaster zoning.	[4]	Understand	CO2
Q2	Define Hazard Assessment and underline the methodologies for conducting hazard assessment.	[8]	Understand	CO2
Q3	How do engineered structures help us to withstand like floods, earthquakes, and cyclones?	[8]	Understand	CO2
Q4	Discuss the need and importance of EIA. What are the key elements in EIA as per Government of India notification?	[8]	Remember	CO2

Shri Shankaracharya Institute of Professional Management & Technology
Department of Civil Engineering
Class Test – I   Session: January - June, 2023 Month – April
Semester – 6th 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
	Part- I			
(a)	Calculate the extra length of following bars. (a) Bent up Bars 30 Degree (b) Bent up Bars 45 Degree	[4]	Apply	CO2
(b)	A R.C.C.slab of overall size 6600mm x3300mm having thickness 150mm reinforced with 12mm diameter main bars bent up alternately and placed @150mm c/c. The distribution bar of 8mm dia. Is provided @ 200mm c/c. Assume all-round cover 15mm. Calculate the following: 1. R.C.C. work in Beam 2. Form work for beam 3. Reinforcement in beam	[8]	Apply	CO2
(c)	Describe the long wall and short wall method of estimating with suitable example.	[8]	Understand	CO2
(d)	Estimate the following quantity for the plan of single room building of 5 m ×4 m. and section are represents cross section of the wall with foundation. a) Earth work wxcavation b) PCC in footing c) Brick work plint and foundation d) DPC e) Brick work in super structure	[8]	Apply	CO2
	Part- II			
(a)	Write Unit of measurement. 1. DPC 2. Cement concrete bed 3. Cutting of Angles, Tees and Plates 4. Rolled Steel Joist	[4]	Understand	CO1
(b)	Differentiate Between Abstract and Detailed Estimate.	[8]	Analyze	CO1

(c)	Prepare approximate estimate of a building from following data i) Plinth area -- 180sqm. ii) Plinth area rate -- Rs.3500/sqm. iii) Special architectural treatment--1% of cost of building iv)Electrification charges--8% of cost of building v) Water supply and sanitary installation—5% of cost of building vi)Contingencies—3% of cost of building vii) Supervisor charges--3% of cost of building.	[8]	Apply	CO1
(d)	Describe the following terms 1. Contingencies 2. Technical Sanction 3. Tool and Plants 4. Work Charge Establishment	[8]	Understand	CO1

Shri Shankaracharya Institute of Professional Management & Technology, Raipur
Department of Civil Engineering
SSIPMT
Class Test – I Session: Jan-June, 2023   Month – April
Semester – 6th   Subject – Concrete Technology   Sub. Code – C020632(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
Part I				
A.	Define specific surface and surface index of aggregate.	[4]	Remember	CO1
B.	Describe the process of hydration of cement with suitable diagram of hydrated product.	[8]	Understand	CO1
C.	Discuss the significance of following properties of aggregates: (i) Soundness (ii) Shape (iii) Gap graded aggregate	[8]	Understand	CO1
D.	Discuss the following: (i) grading requirements of aggregates (ii) blended cement	[8]	understand	CO1
Part II				
A.	Describe curing of concrete with its types.	[4]	Understand	CO3
B.	Enlist and Discuss the factors affecting strength of concrete.	[8]	Understand	CO3
C.	Discuss the following: (Any three) i) Shrinkage of concrete ii) Permeability of concrete iii) Durability of concrete iv) Modulus of Elasticity of concrete	[8]	Understand	CO3
D.	Discuss creep on concrete and factor affecting it.	[8]	Understand	CO3

ShriShankaracharyaInstituteofProfessionalManagement&TechnologyDepartmentof CivilEngineering
Class Test–ISession: Jan – June, 2023Month –April
Semester – 6th   Subject–EnvironmentEngineeringCode–C020612(020)TimeAllowed:2hrs.   Max Marks:40

Note:-Ineach part -:a) Question 1is compulsorycarrying 4marks.
b)Attemptanytwo Questionsoutof 2,3&4carrying8 markseach.

Q.No.	Questions	Marks	Levels ofBloom'staxonomy	CO's
	Part I			
1)	Whatdoyou meanby "FireDemand"?Foracityhavingapopulationof1,35,000, Obtainthefiredemand usingNationalBoardFormula.	[4]	Understand	CO1
2)	Outline the different chemical water quality parameters giving detailedexplanationwithreferencetoacceptableand causeofrejectionlimits.	[8]	Analyze	CO1
3)	A 100 ml sample of water having pH of 11.5 is titrated with 0.02 N H_2SO_4. Thesample attains a pH of 8.3 after 5ml of acid is added to it. An additional 4 ml ofacidisrequiredto bringthepHofsampleto4.5.Whatarethetypesofalkalinitiespresent in the water sample and determine the concentration of each in mg/L asCaCO$_3$	[8]	Apply	CO1
4)	Followingtablerepresentsthecensusdataforacity: 	[8]	Apply	CO1

Year	Population
1935	25,000
1945	28,000
1955	34,000
1965	42,000
1975	???

IfPopulation attheend ofyear2005 is75,000,Calculate:
   a) Populationfortheyear1975(UsingIncrementalIncreaseMethod)
   b) Populationfortheyear1995(UsingArithmeticIncreaseMethod)

Q.No.	Questions	Marks	Levels ofBloom'staxonomy	CO's
	Part II			
1)	Explain the mechanism of Coagulation in water treatment. What are thecoagulantsused? Write chemicalformulaeof each.	[4]	Understand	CO2
2)	Derivetheformulaeofsettlingvelocityusing StokesLaw.Statetheassumptionsused.	[8]	Analyze	CO2
3)	Water works of a town is provided with sedimentation tank of size40m×15m×3.5m.If115 ppmofsuspended solidsarepresentinthewaterand60%are removed in the basin, Specific gravity of solids= 3.1, determine the following,if8.5×10^6 litersof water istreateddaily (i)t_d (ii)FlowVelocity(iii)Volumeofsolidsdeposited(iv)Overflowrate	[8]	Apply	CO2
4)	Design a sedimentation tank rectangular in shape to treat 2 million liters of waterwithdetentionperiodof2hours.Ifthewatercontains700mg/lofsuspendedsolids,35% are settleable, calculate the volume of sludge produced for one-monthcleaning period. Specific Gravity = 1.1 Surfaceoverflowrateshallbelessthan45000l/d/m^2.	[8]	Create	CO2