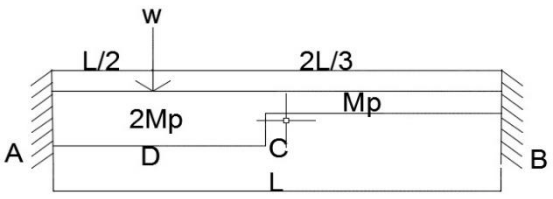
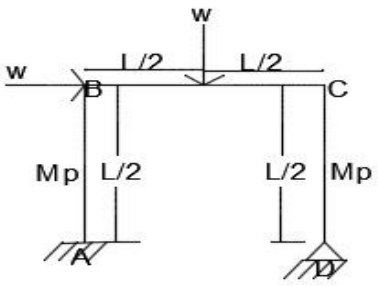
	DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE **Supplementary Examination – Summer 2022** **Course: B. Tech. Branch : CE Semester :V** **Subject Code & Name: BTCVC501 Design of Steel Structures** **Max Marks: 60 Date: Duration: 3 Hr.**		
	Instructions to the Students: *1. All the questions are compulsory.* *2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.* *3. Use of non-programmable scientific calculators is allowed.* *4. Assume suitable data wherever necessary and mention it clearly.*		
		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		
A)	**State advantages and disadvantage of steel structures. And State failure of joints**	**CO2**	**6**
B)	**An ISA 100X100X10 mm angle is to be welded in shop to 12 mm thick gusset plate. The angle carries an ultimate pull of 300 KN applied along its centroidal axis. Determine the length of side fillet welds required at the heel and toe of the angle.**	**CO2**	**6**
C)	**Two plates 200x8 mm of grade Fe410 are connected by 20 mm diameter bolts of grade 4.6 using butt joint. Design the bolted connection to transmit pull equal to the strength of the plate. Also sketch the arrangement of the bolts in the joint.**	**CO2**	**6**
Q.2	**Solve Any Two of the following.**		
A)	**Design a suitable angle section to carry a factored tensile force of 210KN assuming single row of M20 bolts.The yield strength and ultimate strength of material is 250 and 410Mpa .The length of member is 3m.**	**CO3**	**6**
B)	**Determine the load carrying capacity of a compound consisting ISMB 400 @ 61.6 Kg/m with a one cover plate of 300x20 mm on each flange and having a length of 5m.One end of column is fixed and other pinned**	**CO3**	**6**
C)	**Differtiate lacing and battening**	**CO1**	**6**
Q. 3	**Solve Any two of the following.**		
A)	**Explain the design principles of Gantry girder**	**CO3**	**6**
B)	**A purlin is to be designed to support elastic cladding such as GI sheet as roof Material for trusses spaced at 3.5m c/c purlin, along principal**	**CO3**	**6**

	rafter are arranged at a distance of 1.35m c/c .The pitch of the trusses is 0.2m.Design a section for a purlin		
C)	**Explain types of trusses and their load combinations used in analysis**	**CO3**	**6**
Q.4	**Solve Any Two of the following.**		
A)	**Design a built up column with single lacing system to carry a factored load of 1800 KN .The length of the columnis 8m.It is effectively held in position at both ends and restrained against rotation at one end.**	**CO2**	**6**
B)	**Design a gusseted base connection for a column ISHB 450,5m long with cover plate of 400x20mm on both faces.The column carries a factored load of 5500 KN .Foundation block is made of M20 grade concrete.**	**CO2**	**6**
C)	**Explain slab base, gusseted base and moment resisting bases.**	**CO4**	**6**
Q. 5	**Solve Any Two of the following.**		
A)	 **Find the collapse load for a beam**	**CO2**	**6**
B)	 **Find the collapse load for a beam**	**CO2**	**6**
C)	**State the approach on plastic analysis and limit state analysis**	**CO1**	**6**
	***** End *****		

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Winter Examination – 2022

Course: B. Tech. **Branch : Civil Engineering** **Semester :V**

Subject Code & Name: BTCVC 501 Design of Steel Structures

Max Marks: 60 **Date:28/01/2023** **Duration: 3 Hr.**

Instructions to the Students:

1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*
5. *Use of **IS800, IS 875** and **steel table** is permitted*

		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		
A)	Explain Different types of Loads acting on steel Structure	Knowledge	**6**
B)	Determine the design strength of rivet in a butt joint by 2 plates 12 mm thick by using 8 mm thick cover plate with hand driven rivets for the case of single cover butt joint and double cover butt joint	Application	**6**
C)	Explain Different types of riveted joint	Remember	**6**
Q.2	**Solve Any Two of the following.**		
A)	A single angle ISA 90 x 60 x 8 mm is connected with longer leg to the gusset plate of 10 mm thick. Find the effective area a)with 18 mm diameter rivet b) welded connection	Application	**6**
B)	2 ISA 75 x 75 x 10 mm connected to gusset plate 12 mm thick with 16 mm diameter bolt find the permissible strength in axial tension connected same side of gusset plate take f_y = 250 Mpa	Application	**6**
C)	Calculate moment resisting capacity of a simply supported beam consist of ISMB 300 over a span of 3 m also calculate safe udl(excluding self weight) the beam can carry	Application	**6**
Q. 3	**Solve Any Two of the following.**		
A)	Calculate the Maximum wheel load and moments on Gantry girder for the following data crane capacity = 100 KN self wt. of crane 100 KN Self wt of trolley , motor and hook 20 KN Appx. min approach of crane = 12 m	Analysis	**6**

wheel base = 3.0 m

c/c distance between gantry rails = 14 m

span of GG 6 m

self wt of rail section 300 N/m

f_y 250 N/mm^2

B)	Calculate the section modulus and selection of section on Gantry girder for the same data as available on Q 3 A	Analysis	**6**
C)	Determine the live load per panel point for a Pratt truss of span 15 m with sloping angle 22^0take a weight of AC sheet roof covering = 175 N/m^2	Remember	**6**

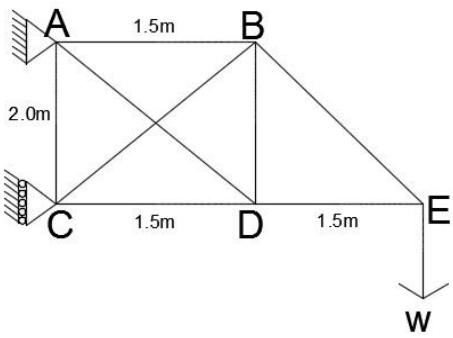
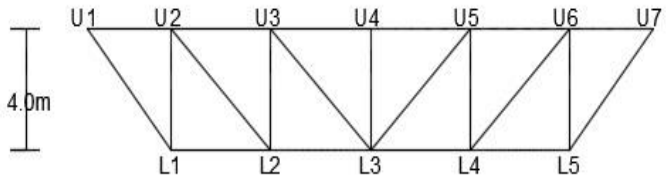
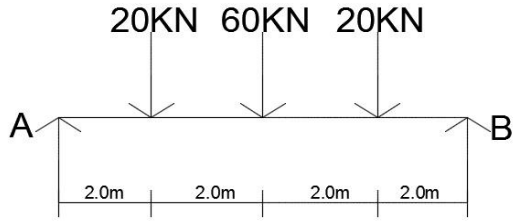
Q.4 Solve Any Two of the following.

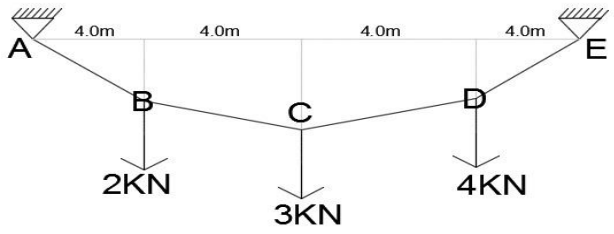
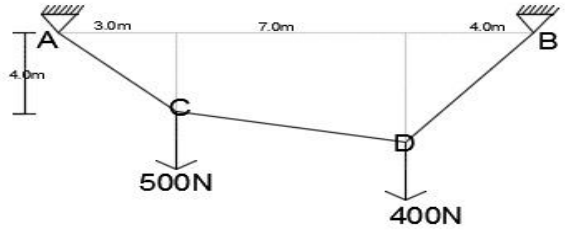
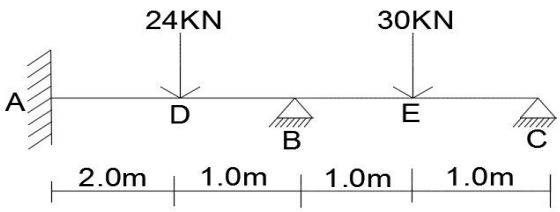
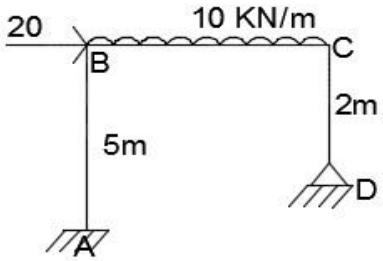
A)	Explain the Lacing system and battening system for columns	Knowledge	**6**
B)	Write short Note on Grillage Foundation	Synthesis	**6**
C)	Design a slab base for column section ISHB 300 @63.0 kg/m subjected to axial load of 900 KN M 20 concrete is used for foundation. Provide welded connection between column and base plate	Application	**6**

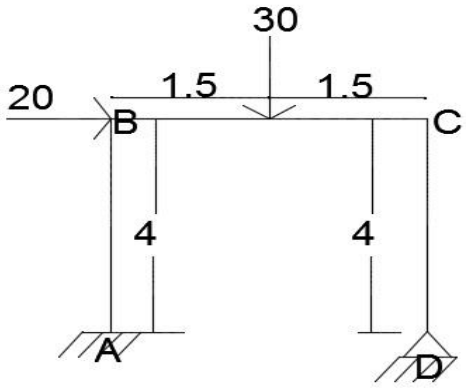
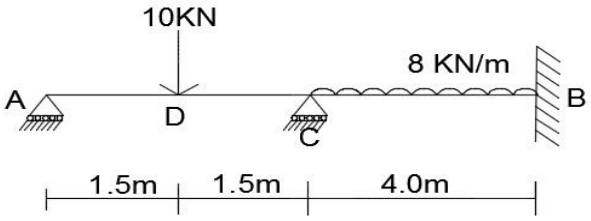
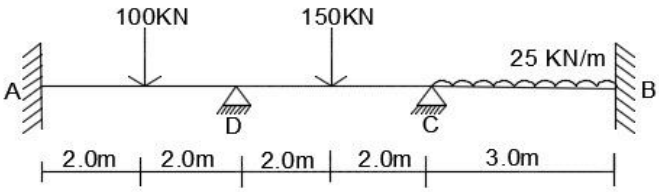
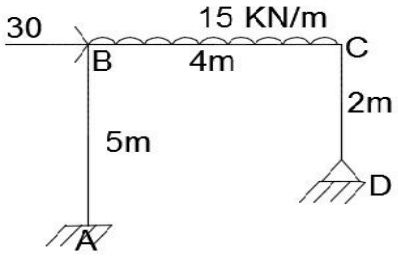
Q. 5 Solve Any Two of the following.

A)	Explain idealized stress strain curve for mild steel	Remember	**6**
B)	Explain the concept of plastic hinge	Knowledge	**6**
C)	Draw with neat sketch of different collapse mechanism	Synthesis	**6**

***** End *****

	DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE **Supplementary Examination – Summer 2022** **Course: B. Tech. Branch : CE Semester :V** **Subject Code & Name: BTCVC502 Structural Mechanics II** **Max Marks: 60 Date: Duration: 3 Hr.**		
	Instructions to the Students: *1. All the questions are compulsory.* *2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.* *3. Use of non-programmable scientific calculators is allowed.* *4. Assume suitable data wherever necessary and mention it clearly.*		
		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**	**CO1**	**6**
A)	 **Analyse the truss frame by energy method .The member are all of the same material**		
B)	 **Draw ILD for the various member of the Deck type girder shown in figure.6 Pannels @ 3m each**	**CO3**	**6**
C)	 **A simply supported beam of span 8m loaded as shown in fig.Find the shear force and BM at section 4m from left end .Draw ILD for support reaction,SF,BM.**	**CO1**	**6**
Q.2	**Solve Any Two of the following.**		

A)	 **Three loads are suspended as shown from the cable ABCDE knowing that dc=3m determine A) components of the reaction at E** **B)the maximum tension in the cable**	**CO2**	**6**
B)	 **A string supported and loaded as shown in fig.Determine the support reaction and maximum tension in segment of the cable**	**CO2**	**6**
C)	**Differtiate lacing and battening**	**CO1**	**6**
Q. 3	**Solve Any Two of the following.**		
A)	 **By flexibility method analyze the beam and Draw SFD and BMD**	**CO1**	**6**
B)	 **Analyse the frame by Flexibilty method**	**CO1**	**6**

C)	 **Analyse the frame by Flexibilty method**	**CO1**	**6**
Q.4	**Solve Any Two of the following.**		
A)	 **Analyse the beam by Stiffness Method**	**CO1**	**6**
B)	 **Analyse the beam by Stiffness Method**	**CO1**	**6**
C)	 **Analyse the beam by Stiffness Method**	**CO1**	**6**
Q. 5	**Solve Any Two of the following.**		
A)	**State types of elements 1D,2D,and 3D also Plain stress and strain**	**CO1**	**6**

B)	**State the principle of minimum potential energy, also advantage and disadvantages of Finite element method**	**CO2**	**6**
C)	**List the various methods of solving boundries values and properties of stiffness matrix**	**CO1**	**6**
	***** End *****		

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Winter Examination – 2022

Course: B. Tech. **Branch : Civil** **Semester :V**

Subject Code & Name: Geotechnical Engineering (BTCVC502)

Max Marks: 60 **Date : 31/01/2023** **Duration: 3 Hr.**

Instructions to the Students:

1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		**12**
A)	**Explain two phase and three phase system of soil with a neat sketch.**	**L2 /1**	**6**
B)	**Define moisture content. Enlist various method of determination of moisture content and explain anyone method in detail.**	**L2 /1**	**6**
C)	**Explain soil structure with neat sketches.**	**L2 /1**	**6**
Q.2	**Solve Any Two of the following.**		**12**
A)	**Define Specific Gravity. Enlist various method of determination of Specific Gravity and explain anyone method in detail.**	**L2 /1**	**6**
B)	**Derive an expression between bulk density, water content and dry density.**	**L3 /1**	**6**
C)	**A partially saturated soil has water content of 19% and bulk unit weight of 20KN/$m^{3.}$ Assume G=2.6 calculate degree of saturation, void ratio and porosity.**	**L3 /1**	**6**
Q. 3	**Solve Any Two of the following.**		**12**
A)	**List various methods of determination of coefficient of permeability and explain anyone method with a neat sketch.**	**L2 /2**	**6**
B)	**A falling head permeability test was conducted on a sample of diameter6cm and height 15cm. Diameter if stand pipe was 2cm, initial head-45cm and final head=30cm. Time elapsed -1min 45sec, determine K.**	**L3 /2**	**6**
C)	**What are the different factors affecting permeability of soil.**	**L2 /2**	**6**

Q.4	**Solve Any Two of the following.**		**12**
A)	**Explain different types of shear test conditions of conduction.**	**L2 /3**	**6**
B)	**Explain the procedure to conduct vane shear test on a soil specimen with a neat sketch.**	**L2 /3**	**6**
C)	**A cylindrical sample of soil having cohesion of 0.8Kg/cm^2 and angle of internal friction of 20^0 , is subjected to a cell pressure of 1.0Kg/cm^2. Calculate maximum deviator stress at which the sample will fail and the angle made by failure plane with the axis of sample.**	**L3 /3**	**6**
Q. 5	**Solve Any Two of the following.**		**12**
A)	**Explain spring analogy method of consolidation process.**	**L2 /3**	**6**
B)	**A soil sample has OMC of 10% and bulk density of 1.80gm/cc. Determine void ratio, degree of saturation and dry density take G=2.7**	**L3 /3**	**6**
C)	**Explain the difference between Standard Proctor test and Modified Proctor test.**	**L4 /3**	**6**

***** End *****

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Supplementary Examination – Summer 2022

Course :T.Y. B.Tech. **Branch : Civil Engg.** **Semester : V**

Subject Code & Name : BTCVC503 Soil Mechanics

Max Marks : 60 **Date : / /** **Duration: 3.45 Hr.**

Instructions to the Students:

1. All the questions are compulsory.
2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.
3. Use of non-programmable scientific calculators is allowed.
4. Assume suitable data wherever necessary and mention it clearly.

		(Level/CO)	Marks
Q.1	**Solve Any Two of the Following**		
A)	Explain the terms voids ratio, specific gravity and Bulk density.	CO1	06
B)	Enlist the methods for determination of water content. Explain any one.	CO1	06
C)	Derive relation between bulk unit weight, specific gravity, voids ratio and degree of saturation.	CO1	06
Q.2	**Solve Any Two of the Following**		
A)	Explain Textural classification of Soil.	CO1	06
B)	Explain derivation of two dimensional flow through Laplace equation.	CO2	06
C)	Explain graphical method for determination of Pheratic line through earthen dam.	CO2	06
Q.3	**Solve Any Two of the Following**		
A)	Explain Vane shear test with neat sketch.	CO2	06
B)	Explain procedure of determination of maximum dry density by standard proctor test.	CO3	06
C)	What is vertical stress? State at least four assumption made by Boussinesq's equation.	CO2	06
Q.4	**Solve Any two of the Following**		
A)	Explain theory of compaction and factors influencing compaction.	CO2	06
B)	Explain construction and use of New mark influence chart.	CO3	06
C)	What are the factors contributing slope failure?	CO3	06
Q.5	**Solve Any Two of the Following**		
A)	Explain the Mohr-coulomb's theory of failure.	CO3	06
B)	Explain stress isobar with help of sketch.	CO3	06
C)	Derive the expression for active pressure assuming backfill as dry.	CO3	06

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Winter Examination – 2022

Course: B. Tech. **Branch :Civil Engineering** **Semester :V**

Subject Code & Name:BTCVC 503 & Structural Mechanics-II

Max Marks: 60 **Date:02/02/2023** **Duration: 3 Hr.**

Instructions to the Students:

1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		**12**
A)	Find vertical deflection at joint C of the truss shown in figure. The area of inclined tie AC is 2000mm^2 while the area of horizontal member BC is 1600mm^2. Take E= 200KN/ mm^2 .	**(Evaluate)**	**6**

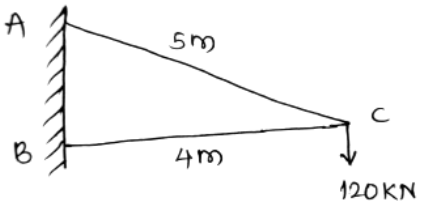


Fig Q.1(a)

B)	A single concentrated load of magnitude **W** rolls over a simply supported beam of span ***l*** . Calculate and draw maximum positive and negative shear force diagrams and maximum bending moment diagram.	**(Understand)**	**6**
C)	Using influence line method find the shear force and bending moment at section K for the beam loaded as shown in figure.	**(CO3)**	**6**

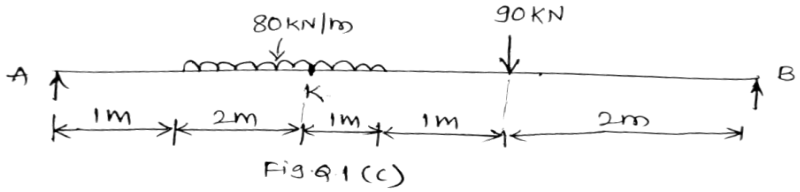


Fig Q.1 (c)

Q.2	**Solve Any Two of the following.**		**12**
A)	A cable of span ***l*** and dip h is subjected to udl ***w*** per unit run of horizontal span. If the dip be considered as small as compared with the span. Show that the difference between the greatest and least tension is approximately ***wh***.	**(Understand)**	**6**
B)	A three hinged parabolic arch of span 20m, rise 3m carries an udl of 30KN/m on left half of the span. Find the bending moment, radial shear	**(Evaluate)**	**6**

force and normal thrust at 6m from left end.

C) A two hinged parabolic arch of span 20m and rise 4m carries an udl of 20KN/m over entire span. Calculate the horizontal thrust if now a support yields laterally with respect to other by 0.02m, what will be the horizontal thrust? Take $I_0 = 1.7 \times 10^7$ mm^4 and E = 200 KN/mm^2. **(Evaluate)** **6**

Q. 3 Solve Any Two of the following. **12**

A) Derive the relationship between stiffness and flexibility matrix. **(CO1)** **6**

B) Using flexibility matrix method analyse the beam shown in figure. **(CO1)** **6**

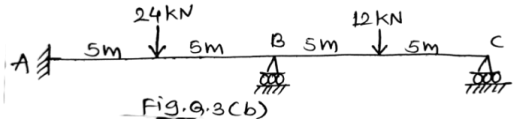


Fig.Q.3(b)

C) Develope the flexibility matrix for the beam shown below **(CO1)** **6**

Fig.Q.3.(c)

Q.4 Solve Any Two of the following. **12**

A) Differentiate between force method and displacement method. **(CO1)** **6**

B) Analyse the frame shown in fig. using stiffness matrix method. **(CO1)** **6**

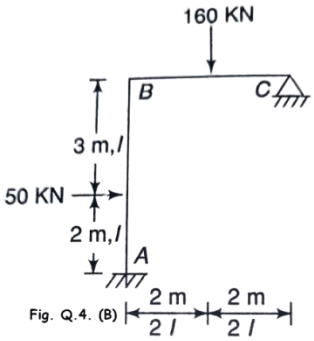
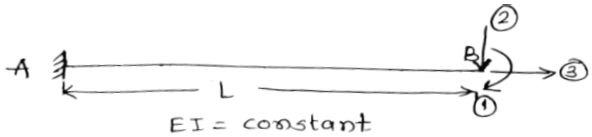


Fig. Q.4. (B)

C) Develope the stiffness matrix for the beam shown in figure **(CO1)** **6**



EI = constant

Fig.Q.4.(c)

Q. 5 Solve Any Two of the following. **12**

A) Write down general steps of finite element method. **(CO2)** **6**

B) Write a note on Pascal's triangle. **(CO2)** **6**

C) Compute the shape functions for one dimensional element. **(CO2)** **6**

***** End *****

	DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE **Supplementary Examination – Summer 2022** **Course: B. Tech. Branch : Civil Engineering Semester : V** **Subject Code & Name: BTCVC504 Environmental Engineering** **Max Marks: 60 Date: Duration: 3 Hr.**		
	Instructions to the Students: *1. All the questions are compulsory.* *2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.* *3. Use of non-programmable scientific calculators is allowed.* *4. Assume suitable data wherever necessary and mention it clearly.*		
		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		
A)	Explain in brief different methods of population forecasting.	CO1	**6**
B)	Explain the different physical, chemical and biological characteristics of water.	CO1	**6**
C)	What are the different factors that which directly affect the per capita demand of town?	CO1	**6**
Q.2	**Solve Any Two of the following.**		
A)	Explain in short water treatment process. Draw its flow diagram.	CO2	**6**
B)	What does mean by sedimentation? What are the different types of sedimentation tanks?	CO2	**6**
C)	What are the different types of filters? Explain all these types in brief.	CO2	**6**
Q. 3	**Solve Any Two of the following.**		
A)	What are the various methods of water supply?	CO3	**6**
B)	Draw the layout of water distribution system.	CO3	**6**
C)	Differentiate continuous and intermittent system of water supply.	CO3	**6**
Q.4	**Solve Any Two of the following.**		
A)	Give the physical, chemical, biological characteristics of domestic sewage from urban.	CO4	**6**
B)	Difference in between separate and combined system.	CO4	**6**
C)	Describe various sources of solid waste and Explain important physical & chemical characteristics of solid waste.	CO5	**6**
Q. 5	**Solve Any Two of the following.**		

A)	Describe various methods used to control air pollution	CO6	**6**
B)	Explain relationship between environmental lapse rate & adiabatic lapse rate.	CO6	**6**
C)	Describe various causes of air pollution and explain how to control air pollution.	CO6	**6**
	***** End *****		

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Winter Examination – 2022

Course: B. Tech. **Branch :Civil Enginerring**

Semester : Fifth

Subject Code & Name: BTCVC 504 Concrete Technology

Max Marks: 60 **Date: 08/02/23** **Duration: 3 Hr.**

Instructions to the Students:

1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

<table>
<tr><td></td><td></td><td>(Level/CO</td><td>Marks</td></tr>
<tr><td>Q. 1</td><td>Solve Any Two of the following.</td><td></td><td>12</td></tr>
<tr><td>A)</td><td>Define Hydration of cement. Explain wet Process of Cement manufacturing with flow chart.</td><td>CO1</td><td>6</td></tr>
<tr><td>B)</td><td>Define bulking of sand and explain in detail the procedure to find the bulking of sand with diagram..</td><td>CO1</td><td>6</td></tr>
<tr><td>C)</td><td>Calculate fineness modulus for the given data of fine aggregate. Total weight of C.A. = 1000 gm. State type of sand
<table>
<tr><td>Sieve size (mm)</td><td>4.75</td><td>2.36</td><td>1.18</td><td>600µ</td><td>300µ</td><td>150µ</td><td>Pan</td></tr>
<tr><td>Weight retained (gm)</td><td>20</td><td>75</td><td>210</td><td>274</td><td>305</td><td>106</td><td>10</td></tr>
</table></td><td>CO1</td><td>6</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>Q.2</td><td>Solve Any Two of the following.</td><td></td><td>12</td></tr>
<tr><td>A)</td><td>Describe the procedure for determination of workability by slump cone test with diagram..</td><td>CO1</td><td>6</td></tr>
<tr><td>B)</td><td>Explain in detail Batching of concrete with its types.</td><td>CO1</td><td>6</td></tr>
<tr><td>C)</td><td>Write short note on i) Segregation ii) Bleeding</td><td>CO1</td><td>6</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>Q. 3</td><td>Solve Any Two of the following.</td><td></td><td>12</td></tr>
<tr><td>A)</td><td>Define Admixtures. Enlist its types and state purpose of adding the admixtures into the concrete. (any four)</td><td>CO2</td><td>6</td></tr>
<tr><td>B)</td><td>Enlist the different types of construction chemicals and state its applications.</td><td>CO2</td><td>6</td></tr>
<tr><td>C)</td><td>Write a short notes on Green Concrete and Bonding admixtures.</td><td>CO2</td><td>6</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>Q.4</td><td>Solve Any Two of the following.</td><td></td><td>12</td></tr>
</table>

A)	What is mean by Alkali-Aggregate Reaction (AAR) and write the points to control Alkali-Aggregate Reaction.	**CO1**	**6**
B)	Explain in detail shrinkage of concrete with its types and their control.	**CO1**	**6**
C)	State the factors contributing to cracks in concrete and its preventive measures.	**CO1**	**6**
Q. 5	**Solve Any Two of the following.**		**12**
A)	Explain the concrete mix design procedure by IS code method.	**CO3**	**6**
B)	What are the factors causing variations in the quality of concrete.	**CO3**	**6**
C)	Enlist Non Destructive tests for determination of strength of hardened concrete and explain any one test.	**CO3**	**6**
	***** End *****		

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	DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE **Supplementary Examination – Summer 2022** **Course: B. Tech. Branch : Civil Engineering Semester : V** **Subject Code & Name: BTCVC505 Transportation Engineering** **Max Marks: 60 Date: Duration: 3 Hr.**		
	Instructions to the Students: *1. All the questions are compulsory.* *2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.* *3. Use of non-programmable scientific calculators is allowed.* *4. Assume suitable data wherever necessary and mention it clearly.*		
		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		
A)	What are the various method of classifying the road? Briefly outline the classification based on location & function as suggested in the Nagpur road development plan.	CO1	**6**
B)	Discuss factor affecting on highway alignment.	CO1	**6**
C)	What do you understand by IRC? How it is formulated? List out four function of IRC.	CO1	**6**
Q.2	**Solve Any Two of the following.**		
A)	Enumerate cross sectional element of highway & Explain with neat sketch.	CO2	**6**
B)	Explain in detail surface & subsurface drainage in flexible pavement.	CO2	**6**
C)	Define sight distance. What are the different types of sight distance? Explain analysis of stopping sight distance.	CO2	**6**
Q. 3	**Solve Any Two of the following.**		
A)	What are various test conducted on aggregate & give purpose of each test.	CO3	**6**
B)	What are various test conducted on bitumen & give purpose of each test.	CO3	**6**
C)	What are various test conducted on aggregate & give purpose of each test.	CO3	**6**
Q.4	**Solve Any Two of the following.**		
A)	Enlist various Traffic studies. Explain any one.	CO4	**6**
B)	What are the causes and control measures of road accident?	CO4	**6**
C)	Explain in brief Intelligent Transport Systems (ITS).	CO4	**6**
Q. 5	**Solve Any Two of the following.**		

A)	Explain design Step of flexible pavement according to code of practices IRC37:2001	CO5	**6**
B)	Explain design Step of rigid pavement according to code of practices IRC58:2002	CO5	**6**
C)	Explain in brief comparison between various modes of transport.	CO6	**6**
	***** End *****		

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Supplementary Examination – Summer 2022

Course: B. Tech. **Branch: Civil** **Semester: V**

Subject Code & Name: BTCVE506A Materials, Testing & Evaluation

Max Marks: 60 **Date:** **Duration: 3 Hr.**

Instructions to the Students:

1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
4. *Assume suitable data wherever necessary and mention it clearly.*

		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		
A)	What are type of ceramic & its application?	CO1/ Understand	**6**
B)	Draw and explain stress strain behavior of metal.	CO1/ Understand	**6**
C)	Enlist out type of cement and its application	CO1/ Evaluate	**6**
Q.2	**Solve Any Two of the following.**		
A)	Explain type of bricks.	CO1/ Understand	**6**
B)	Elaborate the term – 3D printing.	CO1/ Evaluate	**6**
C)	Describe hemp lime concrete?	CO1/ Understand	**6**
Q. 3	**Solve Any One of the following.**		
A)	Discuss resin and categorize its type.	CO1/ Evaluate	**12**
B)	Explain the test procedure- ultrasonic test.	CO2/ Understand	**12**
C)	Differentiate between UTM and CTM.	CO2/ Analyze	**12**
Q.4	**Solve Any Two of the following.**		
A)	Illustrate the term FRP.	CO1/ Analyze	**6**

B)	Enlist the destructive testing methods & justify its importance.	CO1/ Evaluate	**6**
C)	RCC structures are preferred more. Justify the statement.	CO1/ Evaluate	**6**

Q. 5 Solve Any One of the following.

A)	Enlist & give the importance of mechanical properties in the material.	CO1/ Analyze	**12**
B)	Using applications, discuss the properties of glass.	CO1/ Analyze	**12**
C)	Discuss NDT testing and its classification.	CO2/ Understand	**12**

***** End *****

	DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE **Supplementary Examination – Summer 2022** **Course: B. Tech. Branch: …….. Semester:** **Subject Code & Name: (BTCVE506D) Business Communication & Presentation Skills** **Max Marks: 60 Date: Duration: 3 Hours**		
	Instructions to the Students: *1. All the questions are compulsory.* *2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.* *3. Use of non-programmable scientific calculators is allowed.* *4. Assume suitable data wherever necessary and mention it clearly.*		
		(Level/CO)	Marks
Q. 1	**Solve any TWO of the following.**		
A)	According to you, what is technical vocabulary and what is its importance in the effective presentation?	**L2/CO2**	6
B)	Presentation with graphical features is more effective, justify.	**L3/CO3**	6
C)	Explain how the structure of sentence can make the presentation effective?	**L3/CO1**	6
Q.2	**Solve any TWO of the following.**		
A)	What layouts are used while writing the professional letters? Illustrate.	**L3/CO2**	6
B)	Imagine you are going to write an email to your superior to appoint new recruits in your department and form a draft for the email.	**L1/CO2**	6
C)	Explain, how to use the computer aids while preparing the presentation?	**L3/CO3**	6
Q. 3	**Solve the following.**		
A)	Explain any of the three types of report writing.	**L1/CO5**	6
B)	What cares have to be taken into consideration while writing a report? Explain.	**L3/CO3**	6
Q.4	**Solve any TWO of the following.**		
A)	For you, what is the role of meetings in the development of business?	**L3/CO6**	6
B)	In the process of communication, non-verbal communication has more importance than the verbal communication has, elaborate.	**L2/CO2**	6
C)	Do you agree with ‘leadership in the hands with vision leads the business to the top’? Explain.	**L3/CO3**	6
Q. 5	**Solve the following.**		

A)	Asking questions can add value to the presentation, justify.	**L3/CO5**	6
B)	What is the difference between IQ and EQ? Explain in detail.	**L3/CO4**	6
	***** End *****		

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DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Winter Examination – 2022

Course: B. Tech. Branch: Civil Engineering Semester :V

Subject Code & Name: BTHM505 Project Management

Max Marks: 60 Date: 14/02/2023 Duration: 3 Hr.

Instructions to the Students:

1. *All the questions are compulsory.*
2. *The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in ( ) in front of the question.*
3. *Use of non-programmable scientific calculators is allowed.*
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		(Level/CO)	Marks
Q. 1	**Solve Any Two of the following.**		**12**
1.A)	**Explain Bar chart, its aspects, advantages and dis-advantages.**	**CO1**	**6**
1.B)	**Draw the network and calculate TE & TL for all activates for the following** **Activity (i-j)** | **1-2** | **2-3** | **2-4** | **3-5** | **3-6** | **4-5** | **4-7** | **5-8** | **6-8** | **7-8** **Duration (t^{ij}) Days** | **5** | **2** | **6** | **4** | **4** | **2** | **3** | **7** | **8** | **2**	**CO1**	**6**
1.C)	**Prepare table and calculate EST, EFT,LST,LFT, and Total Float associated with the project in Q.no.1(B) , Find critical path & project Duration**	**CO1**	**6**
Q.2	**Solve Any Two of the following.**		**12**
2.A)	**Explain briefly Direct cost and indirect cost for construction project**	**CO2**	**6**
2.B)	**The following table gives the data for the duration and costs of each activity of project network. The indirect cost of the project 3000Rs/Week.**	**CO2**	**6**

Activity	Normal Duration (Week)	Normal Cost (Rs.)	Crash Duration (Week)	Normal Cost (Rs.)
1-2	6	7000	3	14500
1-3	8	4000	5	8500
2-3	4	6000	1	9000
2-4	5	8000	3	15000
3-4	5	5000	3	11000

Draw network. Find project duration and show critical path based on normal duration and corresponding total project cost. Calculate cost slope for each activity.

<table>
<tr><td>2.C)</td><td>Determine the optimum duration of project and the corresponding minimum cost associated with the project in Q.no.2 (B)</td><td>CO2</td><td>6</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>Q. 3</td><td>Solve Any Two of the following.</td><td></td><td>12</td></tr>
<tr><td>3.A)</td><td>Differentiate between CPM and PERT</td><td>CO3</td><td>6</td></tr>
<tr><td>3.B)</td><td>Draw the network and find the project duration & Critical path for the following
<table>
<tr><th>Activity (i-j)</th><th>t_O (Optimistic Time)</th><th>t_L (Most likely Time)</th><th>t_P (Pessimistic Time)</th></tr>
<tr><td>1-2</td><td>6</td><td>9</td><td>18</td></tr>
<tr><td>1-3</td><td>5</td><td>8</td><td>17</td></tr>
<tr><td>2-4</td><td>4</td><td>7</td><td>22</td></tr>
<tr><td>3-4</td><td>4</td><td>7</td><td>16</td></tr>
<tr><td>4-5</td><td>4</td><td>10</td><td>22</td></tr>
<tr><td>2-5</td><td>4</td><td>7</td><td>10</td></tr>
<tr><td>3-5</td><td>2</td><td>5</td><td>8</td></tr>
</table></td><td>CO3</td><td>6</td></tr>
<tr><td>3.C)</td><td>Find Standard Deviation and Z value if the project mentioned in Q. no 3 (B) has the completed in 35 Days</td><td>CO3</td><td>6</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>Q.4</td><td>Solve Any Two of the following.</td><td></td><td>12</td></tr>
<tr><td>4.A)</td><td>Explain Demand and supply</td><td>CO4</td><td>6</td></tr>
<tr><td>4.B)</td><td>Explain different types of interests</td><td>CO4</td><td>6</td></tr>
<tr><td>4.C)</td><td>Explain the importance of economics in the construction industry (Civil Engineering field).</td><td>CO4</td><td>6</td></tr>
<tr><td></td><td></td><td></td><td></td></tr>
<tr><td>Q. 5</td><td>Solve Any Two of the following.</td><td></td><td>12</td></tr>
<tr><td>5.A)</td><td>Explain the uses, advantages, and limitations of Break-even analysis.</td><td>CO5</td><td>6</td></tr>
<tr><td>5.B)</td><td>Explain the importance of Total Quality Management (TQM).</td><td>CO5</td><td>6</td></tr>
<tr><td>5.C)</td><td>Explain the uses of computer software (Microsoft Project and Primavera) in project management.</td><td>CO5</td><td>6</td></tr>
<tr><td></td><td colspan="2">*** End ***</td><td></td></tr>
</table>

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