

Code No: 80H04

MR18(2019-20)

HT.NO:

**MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)**

Maisammaguda, Dhulapally, (Post Via Kompally), Secunderabad-500100.

B.TECH III YEAR I SEMESTER REGULAR EXAMINATIONS, JANUARY-2022**SUBJECT: Engineering Economics and Accountancy****BRANCH: COMMON TO CE, ME****Time: 3 hours****Max. Marks: 70****Answer all questions****5X14M=70 M****All Questions carries equal marks**

Q.NO.	QUESTIONS	MARKS	*BT LEVEL	CO
1.	a) Define Public Enterprise? Explain latest trends in Entrepreneurship. b) Define partnership. Explain its features.	7+7	L2	1
	OR			
2.	What do you mean by elasticity of demand? How do you measure it?	14	L2	1
3.	a) How do you Analyze the COBB-DOUGLAS production function. b) Illustrate internal and external economics of scale.	7 7	L3	2
	OR			
4.	a) A firm has a fixed cost of Rs 250,000; selling price per unit is Rs 250 and variable cost per unit is Rs 125. Present level of production is 17,500 units. Determine BEP in terms of volume and also sales value. b) Explain various cost concepts.	7 7	L4	2
5.	a) Distinguish between monopoly competition and Perfect Competition. b) Explain features of perfect competition.	7 7	L3	3
	OR			
6.	a) Write note on i) Sealed Bid Pricing ii) Going Rate Pricing b) Explain product life cycle (PLC) with suitable example.	7 7	L2	3
7.	a) Explain various sources of raising finance b) Analyse the factors affecting requirements of working capital.	7 7	L2	4
	OR			
8.	Define Capital Budgeting? Explain its Nature and Scope.	14	L2	4
9.	Journalize the following transactions in the books of Amrutha. 2021, Aug 1 Amrutha commenced business with cash Rs.50,000 2 Purchased goods for cash Rs.10,000 3 Purchased goods from Mohan Rs.6,000 7 Paid into bank Rs.5,000 10 Purchased furniture Rs.2000 20 Sold goods to Suresh on credit Rs.5,000 25 Cash sales Rs. 3,500 26 Paid to Mohan on account Rs.3,000 31 Paid salaries Rs.2,800	14	L4	5
	OR			
10.	a) What is meant by Ratio analysis? Explain briefly about various types of ratios. b) Explain accounting principles and accounting cycle.	7 7	L2	5

*Bloom's Taxonomy Level (BT Level): L1-Remember, L2- Understand, L3- Apply, L4- Analyse, L5- Evaluate, L6- Create.

Code No: 80116

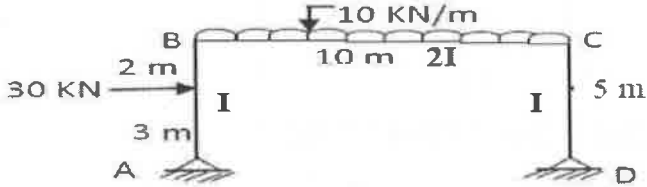
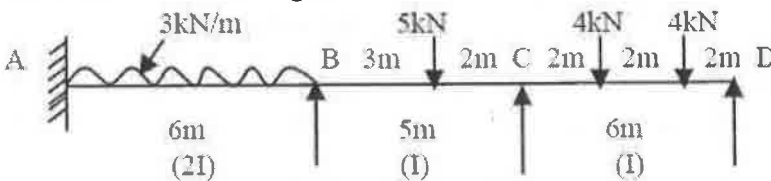
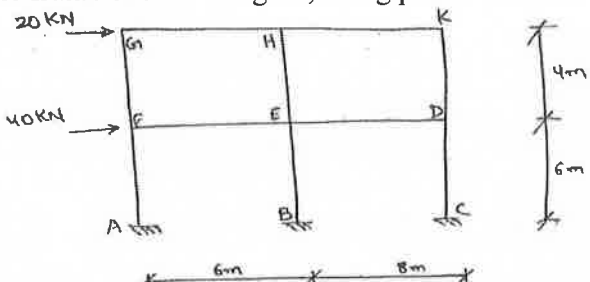
MR18(2019-20)

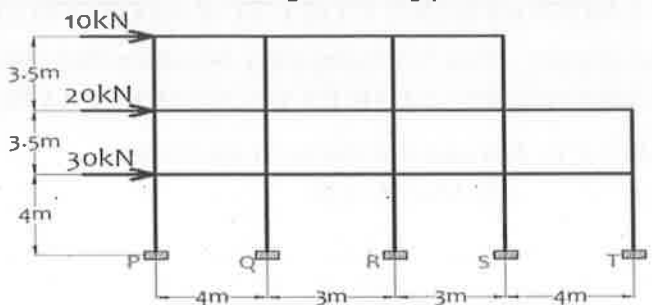
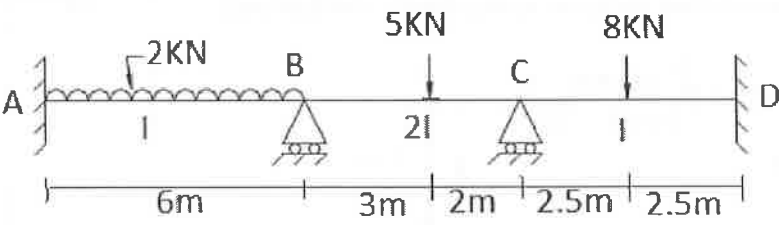
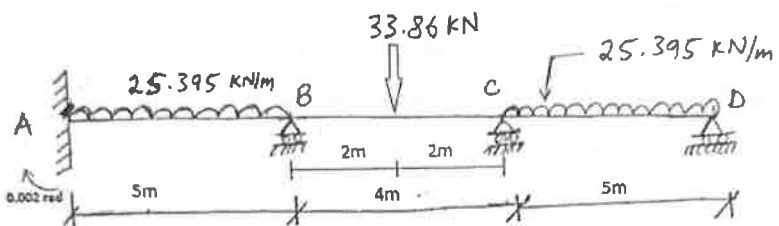
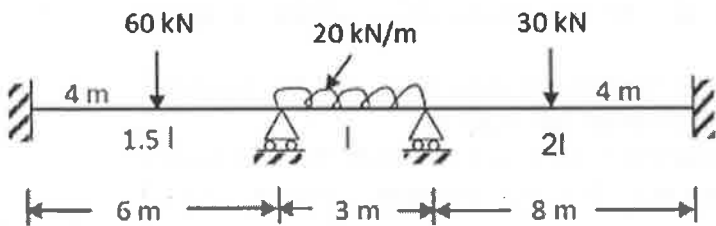
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B.TECH III YEAR I SEMESTER REGULAR EXAMINATIONS, JANUARY-2022**SUBJECT: Advanced Structural Analysis****BRANCH: CE****Time: 3 hours****Max. Marks: 70****Answer all questions****5X14M=70 M****All Questions carries equal marks**

Q.NO.	QUESTIONS	MARKS	*BT LEVEL	CO
1.	Analyse the structure shown in figure using Kani's method and draw BMD 	14	L4	1
OR				
2.	Analyse the continuous beam shown in figure by Kani's method and sketch the B.M diagram. 	14	L4	1
3.	Four equal loads of 200 kN, each equally spaced at 3m apart and UDL of 80 kN/m at a distance of 2m from the last 200 kN loads cross a girder of 30m span from right to left. Using ILD, calculate the S.F and BM at a section of 11m from left support when loading of 200kN is 6m from left support.	14	L3	2
OR				
4.	A single rolling load of 150 kN moves on a girder of span 25m. a) Construct the influence lines for (i) shear force and (ii) bending moment for a section 8m from the left support. b) Construct the influence lines for points at which the maximum shear force and maximum bending moment develop. Also determine these values.	7 7	L3 L3	2 2
5.	Analyse the frame shown in figure, using portal method. 	14	L4	3

	OR			
6.	<p>Analyse the frame shown in figure, using portal method.</p> 	14	L4	3
7.	<p>Analyse the given continuous beam using flexibility matrix method.</p> 	14	L4	4
	OR			
8.	<p>Analyse the continuous beam using flexibility matrix method. Take $EI = 72000 \text{ kNm}^2$.</p> 	14	L4	4
9.	<p>a) Generate the stiffness matrix for the cantilever beam of length L, area A and flexural rigidity EI. b) Explain the properties of stiffness matrix.</p>	7 7	L2 L2	5 5
	OR			
10.	<p>Analyse the given continuous beam using stiffness matrix method</p> 	14	L4	5

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MR18(2019-20)

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B.TECH III YEAR I SEMESTER REGULAR EXAMINATIONS, JANUARY-2022**SUBJECT: Structural Engineering-I (RCC)****BRANCH: CE****Time: 3 hours****Max. Marks: 70****Answer all questions****5X14M=70 M****All Questions carries equal marks****NOTE- IS Code 456:2000 and SP-16 charts are allowed.**

Q.NO.	QUESTIONS	MARKS	*BT LEVEL	CO
1.	a) Discuss merits and demerits of ultimate load method, working stress method and limit state method? b) Design a Simply supported beam of an effective length 5.3m. It is subjected to a live load of 20kN/m. Use M20 Grade concrete and Fe 415 steel?	6 8	L2	1
OR				
2.	Determine ultimate moment of resistance of doubly reinforced section shown in Fig.	14	L3	1
3.	Design the torsional reinforcement in a rectangular beam section, 350mm wide and 750mm deep, subjected to an ultimate twisting (hogging) bending moment of 200 kNm and an ultimate shear of 110kN. Assume M25 concrete and Fe415 steel and mild exposure conditions.	14	L3	2
OR				
4.	A plain concrete beam (M20 grade concrete) has a rectangular section, 300mm wide and 500mm deep (overall). Estimate the cracking torque. Also determine the limiting torque beyond which torsional reinforcement is required (as per the code), assuming $\tau_c=0.3\text{MPa}$.	14	L3	2
5.	Design of two- way slab simply supported on all the four edges for a room 6 m x 4 m clear in size. The superimposed working load is 4 kN/m ² , M20 Concrete grade and Use Fe415 where corners are held down.	14	L3	3
OR				

6.	Design a simply supported slab to cover a room with internal dimensions of 4m X 5m and 230mm thick brick walls all around. Assume a live load of 3 kN/m ² and a floor finish of 1 kN/m ² . Use M20 concrete and fe415 steel. Assume what hat the slab corners are free to lift up. Assume mild exposure conditions.	14	L3	3
7.	Design an axially loaded tied column with an unsupported length of 3 m. The column is fixed at one end and pinned at the other end. The column has to carry a factored load of 2200 kN. Use M25 grade concrete and Fe 415 grade steel. Sketch the reinforcement details.	14	L4	4
OR				
8.	Design the reinforcement in a column of size 400mmX600mm subjected to an axial working load of 2000kN. The column has an unsupported length of 3m and is braced against sideway in both directions. Adopt M-20 grade concrete and Fe-415 HYSD bars. Draw the detailing of reinforcements.	14	L4	4
9.	Design a 'waist slab' dog-legged staircase for an office building, given the following data: Height between floor = 3.2 m Riser = 160mm Width of flight = landing width = 1.5 m Live load = 5.0 kN/m ² Finishes load = 0.6 kN/m ² Assume the stair to be supported on 230mm thick masonry walls at the outer edges of the landing, parallel to the risers Fig Use M20 concrete and Fe415 steel Assume mild exposure conditions.	14	L4	5
OR				
10.	Design a square footing to carry a column of 800 kN from a 30 cm square tied column containing 16m bars as the longitudinal reinforcement. The bearing capacity of soil is 100 kN/m ² . Consider base of footing as 1m below the ground level. The unit weight of earth is 20 kN/m ³ . Use $\sigma_y = 415 \text{ N/mm}^2$ and $\sigma_{ck} = 20 \text{ N/mm}^2$. Draw the plan and elevation to the scale.	14	L4	5

*Bloom's Taxonomy Level (BT Level): L1-Remember, L2- Understand, L3- Apply, L4- Analyse, L5- Evaluate, L6- Create.

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B.TECH III YEAR I SEMESTER REGULAR EXAMINATIONS, JANUARY-2022**SUBJECT: Geotechnical Engineering****BRANCH: CE****Time: 3 hours****Max. Marks: 70****Answer all questions****5X14M=70 M****All Questions carries equal marks**

Q.NO.	QUESTIONS	MARKS	*BT LEVEL	CO
1.	a) Write a brief note on particle size, shape and their characteristics. b) Define 'clay' as it is generally understood. Classify the clay on the basis of their crystalline arrangement.	7 7	L2	1
	OR			
2.	a) In a specific gravity test the following data were obtained at the room temperature of 40°C. Weight of Pycnometer + water = 720.36g Weight of Pycnometer + solids + water = 750.46g Weight of solids = 47.50g Determine the specific gravity of the solids. b) Explain detail about index properties of soil.	7 7	L3	1
3.	A falling head permeability test was performed on a sample of silty sand. The time required for the head to fall in the stand pipe from 60 cm to 30 cm mark was 70 minutes. The sectional area of the stand pipe was 1.25 sq.cm. If the height and diameter of the sample were respectively 10 and 9 cm, determine the value of k .	14	L3	2
	OR			
4.	a) Explain with a neat diagram a method for determining coefficient of permeability of medium sand in the laboratory. b) What are the various factors affecting the coefficient of permeability? Discuss.	7 7	L2	2
5.	Proctor compaction test was conducted on a soil sample, and the following observations were made: if $v=950\text{cc}$, determine MDD and OMC <div style="display: flex; justify-content: space-between;"> <div> Water content % Weight of wet soil, g </div> <div> 7.7 1700 </div> <div> 11.5 1890 </div> <div> 14.6 2030 </div> <div> 17.5 1990 </div> <div> 19.5 1960 </div> <div> 21.2 1920 </div> </div>	14	L3	3
	OR			
6.	a) Briefly explain the Standard Proctor's Test with a neat sketch b) Explain the procedure for constructing the Zero Air Void Line	8 6	L2	3
7.	The average natural moisture content of a deposit is 40%; the specific gravity of the solid matter is 2.8, and the compression index C_c is 0.36. If the clay deposit is 6.1 m thick drained on both sides, calculate the final consolidation settlement. Given: $p_0 = 60\text{kN/m}^2$ and $\sigma_p = 30\text{kN/m}^2$	14	L3	4
	OR			
8.	a) Explain the following terms: i. Under consolidated ii. Over consolidated iii. Degree of consolidated.	8	L2	4

	b) Differentiate compaction and consolidation.	6		
9.	A saturated specimen of cohesionless sand was tested under drained conditions in a triaxial compression test apparatus and the sample failed at a deviator stress of 482kN/m^2 and the plane of failure made an angle of 60° with the horizontal. Find the magnitudes of the principal stresses. What would be the magnitudes of the deviator stress and the major principal stress at failure for another identical specimen of sand if it is tested under a cell pressure of 200kN/m^2 ?	14	L3	5
	OR			
10.	a) Explain the methods for determine the shear strength parameters by consolidated drained test.	8		
	b) Explain the basic concept of shear resistance and shear strength	6	L3	5

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B.TECH III YEAR I SEMESTER REGULAR EXAMINATIONS, JANUARY-2022**SUBJECT: Concrete Technology****BRANCH: CE****Time: 3 hours** **CODE-IS10262 IS ALLOWED****Max. Marks: 70****Answer all questions****5X14M=70 M****All Questions carries equal marks**

Q.NO.	QUESTIONS	MARKS	*BT LEVEL	CO
1.	Explain the experiment to determine the compressive strength of cement. Also explain the different Indian Standard codal provisions for the sand used to conduct the above test and the cements available in the market.	14	L2	1
	OR			
2.	a) Write short notes on the use of Fly ash in concrete, emphasizing on the necessity and benefits of its use. b) Name the Bogue's compounds in cement and explain the utility of each compound in the performance of cement.	7 7	L3	1
3.	Explain the procedure to determine the Aggregate Crushing strength and Aggregate Impact strength. Also highlight the Indian Standards for the same.	14	L3	2
	OR			
4.	Explain the procedure to determine the fineness modulus of aggregate. Also explain the classification of sand as per relevant Indian Standards with regarding to grading.	14	L2	2
5.	a) Explain the factors influencing the workability of concrete. b) Explain the experiment to determine the compacting factor of the concrete. Also explain its significance and utility.	7 7	L3	3
	OR			
6.	a) Explain the concept of Gel Space ratio b) Write short notes on segregation and bleeding of concrete. Highlight the factors influencing the same and methods to reduce the ill effects.	7 7	L3	3
7.	a) Explain the experiment to determine the flexural strength of concrete as per Indian Standards. b) Explain the USPV test for concrete, emphasizing on the principle involved, application and limitation of the same.	7 7	L3	4
	OR			
8.	a) Write short notes on Creep of concrete. b) Explain the experimental procedure to determine the modulus of elasticity of concrete as per Indian standards.	7 7	L2	4
9.	a) Write short notes on Fibre Reinforced Concrete, emphasizing on the applications, advantages and disadvantages. b) Write shot notes on Polymer concrete emphasizing on the applications, advantages and disadvantages.	7 7	L2	5
	OR			

10.	Design the concrete mix for M25 grade using IS 10262 method, for the following data: Specific gravity of cement, sand, coarse aggregate = 3.15, 2.6 and 2.7 respectively, Zone of sand = III, Compacting factor = 0.9, Quality control = good, Exposure = Moderate.(Assume the necessary data required)	14	L4	5
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*Bloom's Taxonomy Level (BT Level): L1-Remember, L2- Understand, L3- Apply, L4- Analyse, L5- Evaluate, L6- Create.

Code No: 80M07

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B.TECH III YEAR I SEMESTER REGULAR EXAMINATIONS, JANUARY-2022**SUBJECT: Introduction to Cyber Security****BRANCH: COMMON TO CE, ME, ECE & MINING****Time: 3 hours****Max. Marks: 70****Answer all questions****5X14M=70 M****All Questions carries equal marks**

Q.NO.	QUESTIONS	MARKS	*BT LEVEL	CO
1.	Describe IP spoofing, Risk management process and taxonomy of various attacks?	14	L1	1
	OR			
2.	a) Identify the methods of defense? Explain different methods to control the computer security? b) Discuss about definition of Cyber security, Components of Cyber security and Layers of Cyber security.	7 7	L4	1
3.	Briefly discuss about Cyber Law in INDIA and IT ACT's in INDIA?	14	L2	2
	OR			
4.	a) Examine the standard of computer evidence. Explain Anti-forensics. b) Discuss the computer forensics tools?	7 7	L3	2
5.	Discuss the types of credit card frauds? Explain online environment of credit card transactions?	14	L2	3
	OR			
6.	a) Explain each and every organizational security policies and measures in mobile computing? b) Compare different types of attacks on Mobile/cell phones?	7 7	L4	3
7.	What is web threat? How many types of web threats and explain each and every web threat?	14	L1	4
	OR			
8.	What is mindset and skills of hackers and other cyber criminals?	14	L3	4
9.	What is data privacy issue? How privacy issue plays a major role in organizations?	14	L2	5
	OR			
10.	a) Explain about what are the financial frauds in cyber domains. b) Explain about any two examples of Indian Cybercrimes?	7 7	L3	5

*Bloom's Taxonomy Level (BT Level): L1-Remember, L2- Understand, L3- Apply, L4- Analyse, L5- Evaluate, L6- Create.

Code No: 80M03

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B.TECH III YEAR I SEMESTER REGULAR EXAMINATIONS, JANUARY-2022**SUBJECT: Object Oriented Programming through Java****BRANCH: CE, ME, MINING, EEE & ECE****Time: 3 hours****Max. Marks: 70****Answer all questions****5X14M=70 M****All Questions carries equal marks**

Q.NO.	QUESTIONS	MARKS	*BT LEVEL	CO
1.	a) Explain various data types used in Java programs. b) Explain the features of Java.	7 7	L2	1
	OR			
2.	a) Define simple java program. b) Describe the applications of Object Oriented Programming.	7 7	L2	1
3.	a) Explain type conversion and type casting. b) Explain inheritance concept in Java.	7 7	L2	2
	OR			
4.	a) Explain method overloading in java with example. B) Define Method and explain the types of methods.	7 7	L2	2
5.	a) Explain the differences between classes and interfaces. b) Write a program to illustrate the usage of the following methods of StringBufferclass. Explain the output in each case. Delete(), deleteCharAt(),append(), charAt().	7 7	L3	3
	OR			
6.	a)What is String in java? Explain different methods in String Class with an example Program. b) Explain the types of variables with example.	7 7	L2	3
7.	a) Define an exception and explain about checked and unchecked exceptions in Java. b) Explain about throw, throws and finally blocks in detail.	7 7	L2	4
	OR			
8.	a) Define thread? Explain the lifecycle of thread. b) Differentiate wait and sleep methods.	7 7	L1	4
9.	a) Explain Character Streams in detail. b) Demonstrate to read data (BufferReader) from a file and write data into another text file using BufferWriter.	7 7	L2	5
	OR			
10.	a) Write data into another text file using Buffer Writer. b) What are the methods available in the Character Streams? Discuss.	7 7	L2	5

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