Hall Ticket Number :										

Code : 1GA51 **R-11 / R-13**

III B.Tech. I Semester Regular & Supplementary Examinations Nov/Dec 2015

Managerial Economics and Financial Analysis

(Common to CE, ME & ECE)

Max. Marks: 70 **Time: 03 Hours**

Answer *any five* questions

All Questions carry equal marks (14 Marks each)

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1. Managerial economics is the application of economic theory to business management. Discuss. 14M
2. What is elasticity of demand? Explain price elasticity of demand and its measurements. 14M
3. What is production function? Explain the concept of Cobb-Douglas production function. 14M
4. Critically examine the role of price fixation with reference to different pricing methods 14M
5. Compare and contrast public and private sector organisations? Suggest are the private sector business organizations promoted Indian economy globally 14M
6. From the following data, you are required to calculate:

   Fixed Expenses ₹ 90000. Variable Cost per unit ₹ 5. Selling Price per unit ₹ 10

   a) BE Sales in Units and Rupees 4M

   b) P/V Ratio 4M

   c) Sales required earning a profit of ₹ 50,000. 6M
7. From the following Trial Balance of XYZ Ltd. Co as on 31st Dec, 2014 is given below. Prepare final accounting statements.

Particulars	Debit	Credit
Capital		1,50,000
Plant & Machinery	50,000	
Sundry Debtors and Creditors	40,000	20,000
Wages	25,000	
Purchases and Sales	2,15,000	3,80,000
Opening Stock	35,000	
Salaries	20,000	
Insurance	5,000	
Cash at Bank	30,000	
Cash on Hand	35,000	
Interest on Loan	10,000	
Discount	5,000	
Vehicles	35,000	
Term Loan		35,000
Bills Receivables and Payable	45,000	15,000
Furniture	50,000	
	6,00,000	**6,00,000**

Closing Stock was valued at ₹ 50000/-. 14M

8. Discuss the role and importance of ratio analysis to assess the performance of a firm 14M

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Hall Ticket Number :										

Code : 1G655 **R-11 / R-13**

III B.Tech. I Semester Regular & Supplementary Examinations Nov/Dec 2015

Design and Drawing of Reinforced Concrete Structures

(Civil Engineering)

Max. Marks: 70 **Time: 03 Hours**

Use of IS 456:2000, SP16 Design aided charts only and IS:875 (Part 1 & Part 2) books is permitted in the examination hall.

PART - A

(Answer any one question) **1 × 28=28 marks**

(Assume any data, if necessary)

1. Design a R.C. slab for a room of size 4 m x 5 m with discontinuous and simply supported edges on all the sides with corners prevented from lifting to support a live load of 4 kN/m^2. It is finished with 20 mm thick granolithic topping. Adopt M 20 grade concrete and Fe 415 HYSD bars.
2. A T-beam slab floor of reinforced concrete has a slab 150 mm thick spanning between the T-beams which are spaced 3 m apart. The beams have a clear span of 10 m and the end bearings are 450 mm thick walls. The live load on the floor is 4 kN/m^2. Using M 20 grade concrete and Fe 415 HYSD bars, design the intermediate beams.

PART – B

(Answer any three questions) **3x14 = 42 marks**

3. Design a reinforced concrete beam supported on two walls 500 mm thick, spaced at a clear distance of 6 m. The beam carries a superimposed load of 30 kN/m. The size of the beam is restricted to 300 mm x500 mm. Use M 20 concrete, and Fe 415 steel. 14M
4. Design a combined column footing with a strap beam for two reinforced concrete columns of size 300 mmx 300 mm spaced 4 m c/c and each supporting a service axial load of 500 kN. The safe bearing capacity of soil at the site is 150 kN/m^2.Adopt M 20 grade concrete and Fe 415 HYSD bars. 14M
5. a) Design a short axially loaded column 300 mm x 300 mm to support a service load of 950 kN. Use M 20 concrete, and Fe 250 steel 11M
   b) What is the minimum and maximum percentage of steel reinforcement in column as per IS code. Why is it required? 3M
6. A simply supported beam, 300 mm wide and 600 mm effective depth carries a uniformly distributed load of 75kN/m including esef weight over an effective span of 6 m. The reinforcement consists of 5 bars of 25 mm diameter. Out of these two bars can be safely bent up at 1 m distance from the support. Design the shear reinforcement for the beam. 14M
7. a) Enumerate the differences between working stress method and limit state method. 4M
   b) Discuss about limit state of serviceability. 4M
   c) Explain how you determine the deflection due to creep and shrinkage. 6M

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Hall Ticket Number :										

Code : 1G653 **R-11 / R-13**

III B.Tech. I Semester Regular & Supplementary Examinations Nov/Dec 2015

Engineering Hydrology-I

(Civil Engineering)

Max. Marks: 70 **Time: 03 Hours**

Answer *any five* questions

All Questions carry equal marks (14 Marks each)

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1.	a)	Describe various methods of computing average rainfall over a basin	7M
	b)	What do you understand by precipitation? Explain various types of precipitation.	7M
2.	a)	What is evapotranspiration? How to measure evapotranspiration?	7M
	b)	What are the Factors affecting Infiltration.	7M
3.		What are the methods of computing runoff from a catchment area? Give the various formulae stating clearly the area for which each is applicable	14M
4.	a)	What are the limitations of applications of Unit hydrograph?	7M
	b)	Explain about rational method.	7M
5.	a)	Derive the expression for discharging from a well in confined aquifer	7M
	b)	Distinguish clearly between a shallow well and deep well. How does a deep well differ from a tube well in confined aquifer	7M
6.	a)	Describe quality of Irrigation water and also standards for irrigation water.	8M
	b)	Find the delta for a crop if the duty for a base period of 110 days is (**i**) 80acres/cusec (**ii**) 1400 hectares/cumec	6M
7.	a)	What are the factors affecting duty? How can duty can improve?	7M
	b)	What do you understand by irrigation efficiencies? What are the various types of efficiency's?	7M
8.	a)	Design the irrigation canal to carry a discharge of 1.4 cumec. Assume N=0.0225,m=1 and B/D=5.7	10M
	b)	What are the drawbacks of kennedy's theory?	4M

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Hall Ticket Number :										

Code : 1G652 **R-11 / R-13**

III B.Tech. I Semester Regular & Supplementary Examinations Nov/Dec 2015

Engineering Geology

(Civil Engineering)

Max. Marks: 70 **Time: 03 Hours**

Answer *any five* questions

All Questions carry equal marks (14 Marks each)

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1. Justify the importance of Engineering Geology from the civil engineering point of view with suitable examples. 14M

2. Write a detailed note on identification of minerals through their physical properties with suitable examples. 14M

3. a) Write a note on geological classification of rocks? 8M
   b) Give the properties of Granite, Basalt and Sand stone. 6M

4. What is a fault? Write a detailed note on the classification of faults with neat sketches. 14M

5. a) Explain the Hydrological properties of rocks 7M
   b) Explain the causes and mitigation of land slides 7M

6. Write a detailed note on Electrical resistivity method of exploration. 14M

7. Discuss the classification of Dams with neat sketches? 14M

8. What is the purpose of tunneling? Explain the geological considerations in the tunneling? 14m

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Hall Ticket Number :										

Code : 1G654 **R-11 / R-13**

III B.Tech. I Semester Regular & Supplementary Examinations Nov/Dec 2015

Environmental Engineering–I

(Civil Engineering)

Max. Marks: 70 **Time: 03 Hours**

Answer *any five* questions

All Questions carry equal marks (14 Marks each)

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1. a) Explain the importance of protected water supply to a community. 5M
   b) Explain with a flow diagram components of a conventional water supply scheme 9M

2. a) List various types of water demand and explain any three demands in detail. 7M
   b) List and explain the factors affecting per capita demand. 7M

3. a) With the help of neat sketch explain different distribution networks. 8M
   b) List and explain different valves used in water supply scheme with respect to their location, suitability and working. 6M

4. a) List and explain different sources of water pollution. 6M
   b) Write a note on water borne diseases and their control. 8M

5. a) Explain the objectives of water treatment with water treatment plant flow chart showing unit operations and processes. 10M
   b) 12MLD of water treated in a water treatment plant using alum dosage of 16mg per liters. Find
      (i) Total quantity of alum used daily
      (ii) Amount of carbon dioxide released. 4M

6. a) With the help of neat sketch explain working of rapid sand filter 10M
   b) Chlorine usage in the treatment of 20,000 m^3/day water is 8 kg/day. The residue after 15 minutes contact time is 0.2 mg/l. Calculate the dosage in mg/l and chlorine demand of the water. 4M

7. a) Write BIS standards and significance for the following.
      (i) Nitrate (ii) Fluoride (iii) Hardness (IV) Chloride (v) Iron 10M
   b) Explain the Activated carbon adsorption process of tertiary water treatment. 4M

8. a) With the help of neat sketch explain general layout of water supply scheme for multi storey building. 8M
   b) Explain detection and prevention of leakage in water supply mains. 6M

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Hall Ticket Number :											R-11 / R-13

Code : 1G651

III B.Tech. I Semester Regular & Supplementary Examinations Nov/Dec 2015

Structural Analysis-II

(Civil Engineering)

Max. Marks: 70 Time: 03 Hours

Answer *any five* questions

All Questions carry equal marks (14 Marks each)

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1. A circular three hinged arch is loaded as shown Fig.1. Calculate the reactions and bending moments at 6 m span from left hinge.

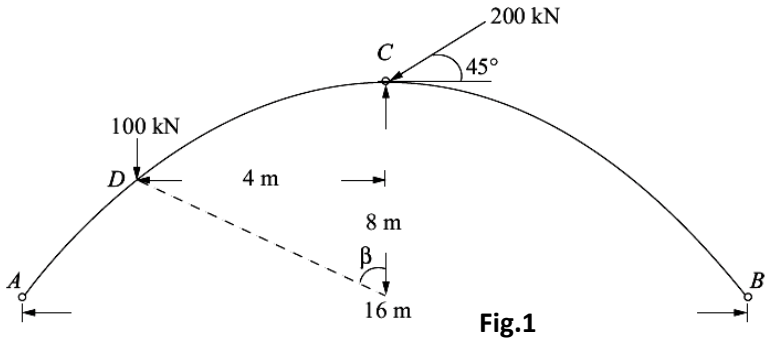

Fig.1

2. A two hinged parabolic arch of 26 m span and central rise of 4 m. It carries a udl of 35 kN/m over the right half of the span and concentrated load of 100 kN at the crown. Locate and find the magnitude of maximum bending moment. Also find the shear force and normal thrust at quarter span section from the left support. Assume that moment of inertia at a section varies as secant of the slope. Neglect the effect of rib shortening.

3. Analyse the frame shown in **Fig.2** using Slope Deflection method, and draw bending moment diagrams. Draw elastic curve.

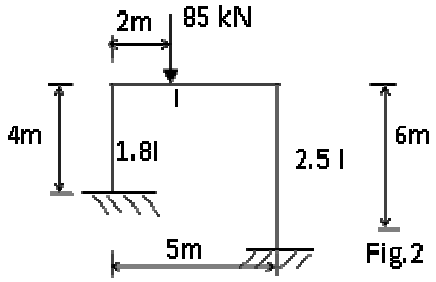

Fig 2

4. Analyse the frame shown in **Fig.2** using Moment distribution method, and draw shear force and bending moment diagrams. Draw elastic curve.

5. Analyse the continuous beam shown in **Fig.3** using theorem of 'Kani's Method', and draw shear force and bending moment diagrams. Locate and find the distances of the points of contra-flexure from supports. Draw elastic curve.

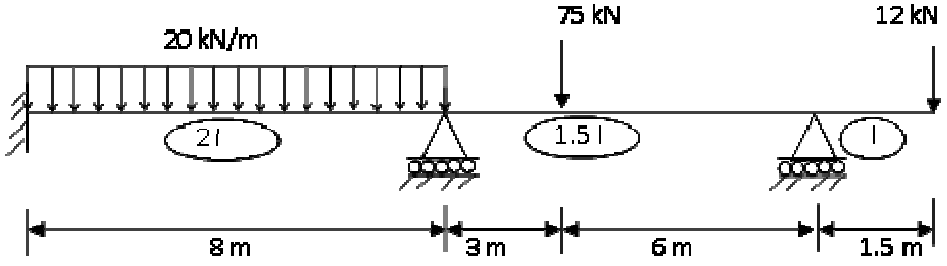

Fig.3

6. Analyse the continuous beam shown in **Fig.4**, using Flexibility method, and draw shear force and bending moment diagrams. During loading, the support C sinks by 15 mm. Locate and find the distances of the points of contra-flexure from supports. Draw elastic curve. Also find the maximum moment. Take EI= 5500 kNm^2.

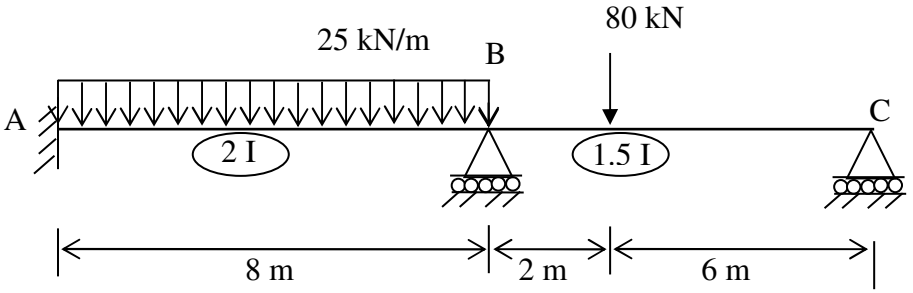

Fig.4

7. Analyse the continuous beam shown in **Fig.5**, using 'Stiffness Method', and draw shear force and bending moment diagrams. Locate and find the distances of the points of contra-flexure from supports. Draw elastic curve.

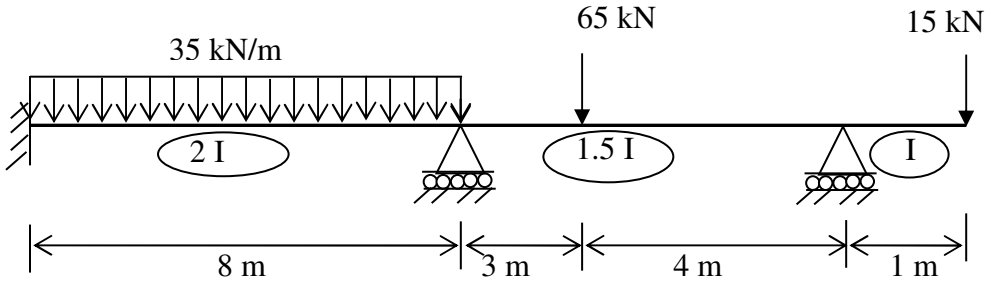

Fig.5

8. Find the collapse load for the beam shown in **Fig.6**, using Plastic Analysis.

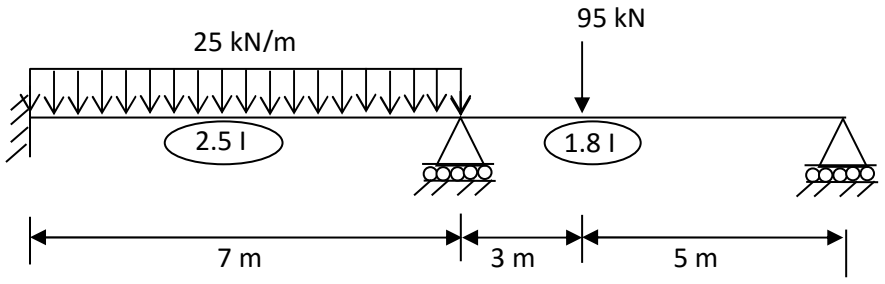

Fig.6

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