DADI INSTITUTE OF ENGINEERING & TECHNOLOGY
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DEPARTMENT OF CIVIL ENGINEERING

DESIGN AND DRAWING OF REINFORCED CONCRETE STRUCTURES

III -I B TECH CIVL (2018-2019)

FACULTY NAME:V.ALIVELU MANGA REGULATION:R16

UNIT: 01 INTRODUCTION

1. Draw stress block diagram and evaluate the following expressions for limit state design:
   a. Neutral Axis depth 10M
   b. Lever arm
   c. Moment of resistance
   d. Clear cover &effective cover
   e. Depth of the beam width of the beam
2. What the difference is between singly reinforced & doubly reinforced section. 5M
3. What are the assumption to be made for limit state and working stress method. 5M
4. Draw drive singly reinforced beam and doubly reinforced stress strain curves. 10M
5. **What** are the method adopted for structural design.

NOTE : From 2nd unit Each question carries 10 Marks.

UNIT-II DESIGN FOR FLEXURE

1. Design a rectangular beam 230mmX600mm over an effective span of 5m,the super imposed load on the beam in 50KN/M. effective cover to rein force is taken as 50mm use fe415,M20 concrete.

2. An L beam has the flange width of 900 mm, with the thickness of slab 100 mm. The web below is 250 × 500 mm. Determine the areas of steel required for it to carry a limiting moment of 600 kNm. Assume f_{ck} = 15 N/mm2 and grade 415 steel. Sketch the details of reinforcement.

3. (a)Find the moment of resistance of a beam section 250 mm x 500 mm deep is reinforced with 2- 16 mm bars in tension at an effective cover of 40 mm. Use M20 concrete and Fe 500 grade of steel.

   b) What would be the increase in the moment of resistance if it is reinforced with 2-16 mm bars of Fe 500 grade in compression at an effective cover of 40 mm. Whether

the neutral axis would shift upwards or downwards, and by what amount?

4. Design a doubly reinforced section for a rectangular beam at mid span having a simply supported effective span of 4.5 m. The superimposed load is 35kN/m and size of beam is limited to 25cm × 40cm overall. Assume suitable section.

5. A rectangular beam 25cm x 50 cm deep is reinforced with 2-14 mm bars in compression zone and 4-25mm bars in tension zone, each at an effective cover of 40mm. Determine the forces in compression, force of tension, cracking moment and moment of resistance assume
   M20 concrete and Fe 415 grade steel
   M25 concrete and Sail MA410 grade steel.

UNIT-03 SHEAR

1. A rectangular section of a simply supported beam is 250 × 420 mm in section with effective cover of 40 mm to the center of reinforcement. It has 4 Nos. of 12 mm bars continued to the supports. Find the shear capacity at the support if the shear reinforcement consists of double vertical stirrup of 8 mm diameter at 200 mm spacing. Assume f_y = 250 N/mm^2, and f_{ck} = 20 N/mm^2

2. A simply supported R.C.C. beam 200 mm x 400 mm (effective) is reinforced with 4 bars of 22 mm diameter on tension side. The beam is carrying a load of 10 kN/m over a clear span of 8 m. Design the shear reinforcement. Use M 20 concrete and Fe 415 steel bars.

3. Calculate the development length required for a bar having dia 16 mm .
   i) In compression M20 grade concrete and Fe 415 steel
   ii) In compression M20 grade concrete and Fe 250 steel
   iii) In tension M25 grade concrete and Fe 415 steel
   iv) In tension M25 grade concrete and Fe 250 steel

4. A rectangular beam of size 300x600 mm is subjected to a factored sagging bending moment of 60 KN M, factored shear force of 45 KN and factored torsional moment 20 KN M. Design the reinforcement at the section using limit state method . use M20 and Fe415 steel.
5. A simply supported R.C.C beam 250mm wide and 450mm deep (effective) is reinforced with a4-18mm dia bars.design the shear reinforcement if M20 grade concrte and fe415 steel is used and beam is subjected to a shear force of 150KN at service state.

UNIT-4 DESIGN OF COMPRESSION MEMBERS

1. A concrete column 500 × 700 mm is of effective height 6 m and is provided with 6 Nos. of 25 mm bars as longitudinal steel. Determine its ultimate bending moment capacity about the major axis when it will be subjected to an ultimate axial load of 2.5 MN. Assume f_y = 415 N/mm^2, and f_{ck} = 25 N/mm^2, and clear cover according to IS 456 for normal conditions of exposure. Place the steel for maximum moment capacity about major axis.

2. An R.C.C. short column of size 400 mm x 500 mm is carrying a factored load of 3000 kN. Design the column assuming $e_{min} < 0.05$ D. Use M25 concrete and Fe 415 steel.

3. Design a circular column of 4 m height is effectively held in position at one end and pinned at other end. The diameter of the column is 400 mm. Calculate the reinforcement if it is required to carry a factored axial load of 1600 kN. Use M30 mix and Fe 500 grade steel.

4. Design a R.C.C. column to carry an axial load of 2000N. The size of the column is restricted to 600 mm square. The effective height of column is 9 m. Use M20 concrete and fe415= 190 N/mm^2.

UNIT:05 SLABS

1. Design a simply supported slab to cover a hall with internal dimensions 4.0 m × 6.0 m. The slab is supported on masonry walls 230 mm thick. Assume a live load of 3 kN/m^2 and finish load of 1 kN/m^2. Use M20 concrete and Fe415 steel. Assume that the slab corners are prevented from lifting up.

2. Design a two-way slab of clear dimensions 4.5 m × 3.6 m with two adjacent edges discontinuous. The slab is subjected to live load of 3.5 kN/m^2 and floor finish of 1.5 kN/m^2. Assume the width of supports is 300 mm. Use M 20 concrete and Fe 415 steel.

3. Design a reinforced concrete slab for a room of clear dimensions 4 m x 5 m. The slab is supported on walls of width 300 mm. The slab is carrying a live load of 4 kN/m^2 and floor finish 1 kN/m^2. Use M20 concrete and Fe 415 steel. The corners of slab are held down. Sketch the layout of the reinforcement.

4. Design an R.C.C. slab of size 5 m x 6 m, simply supported on all four edges with corners held down. The slab is carrying a load of 4 kN/m^2 including floor finish etc. Use M 20 concrete and Fe 415 steel. Sketch the details of reinforcement also.

UNIT:06 FOOTINGS

1. Design the footing for a reinforced concrete column 225 x 450 mm carrying an axial load of 1075 kN. The bearing capacity of the soil is 100 kN/m^2. Use M20 concrete and Fe500 grade steel as reinforcement.

2. Design a combined footing for the two columns of a multistorey building. The columns of size 400 × 400 mm transmits a working load of 800 kN each and they are spaced at 5 m centers. The safe bearing capacity of soil at the site is 200 kN/m^2. Adopt M20 grade concrete and Fe415 grade reinforcement.

3. Design a rectangular footing of uniform thickness for an axially loaded column of size 300 mm x 600 mm. Load on the column is 1150 kN. Safe bearing capacity of the soil is 200 kN/m^2. Use M20 concrete and Fe 415 steel.

4. Design an isolated rectangular footing for an axial load of 1500 kN transmitted by the column. The cross section of the column is 230 mm x 450 mm. The SBC of soil is 180 kN/m2. Adopt M20 grade concrete and Fe 415 grade steel.

5. Design a square footing of uniform thickness for an axially loaded column of 450 mm x 450 mm size. The safe bearing capacity of soil is 190 kN/m2. Load on column is 850 kN. Use M20 concrete and Fe 415 steel.

6. (a) What is meant by eccentric loading on a footing, and under what circumstances does this occur?

(b) Under what circumstances is a trapezoidal shape preferred to a rectangular shape for a two column combined footing?

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DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR: **2018-19** CLASS: **III** SEMESTER: **I**

FACULTY NAME: **Dr.K.HARI KRISHNA**

SUBJECT: **ENGINEERING GEOLOGY**

Unit-1

1. a) Explain the branches of Geology.
   b) Explain one case study of geology importance

2. Give their importance geology in civil engineering

3. Write brief study of case histories of failure of some civil engineering constructions due to geological drawbacks.

4. What is meant by weathering? Discuss the role of geological agents in weathering of rocks.

5. (a) Explain the terms weathering, erosion and denudation

   (b) Write short notes i. Exfoliation, ii. Frost wedging

6. Explain the geological work of River erosion, River transport, River deposition with sketches. And their importance in Civil Engineering

Unit-2

1. Write the physical properties of following minerals. a) Quartz group b) Mica group c) Garnet group

2. a) Define the term mineral give their mode of formation of minerals and Importance in civil engineering.

b) Explain about rock cycle

3. Write the following: a) Form and types b) streak c) Lustre d) Cleavage e) Fracture

f) Hardness g) Transparency

4. Explain the follow types of sand stones based on size, shape, mineral composition, structure, types of Shales, types of Lime stones, conglomerates, laterites.

5.Write the physical properties crystal system, chemical composition and uses of following minerals.

a) kyanite b) Graphite c) chromite

6. Write the classification of metamorphic rocks with their structures and texture.

7. Write the physical properties, crystal system, chemical composition, and uses of following

Minerals. a) Quartz group b) Mica group c) Garnet group

8. What are the types of rocks? Write their characters and the importance in constructions

9. Distinguish the following: i) Granite ii) Basalt iii) Pegmatite iv) Conglomerate v) sandstone

10. Define the term rock. Describe the classification of rocks and their characteristics.

Unit-3

1. Define the following
   a) Strike b)Dip c) Anticline d) Syncline
2. What is fault? Explain types of faults with neat sketches.
3. What is fold? Explain types of folds with neat sketches.
4. What is joint? Explain types of joints with neat sketches.
5. Define unconformity and its types with neat sketch? Explain how to recognize unconformity in field relation in civil engineering.
6. What are the causes and effects of faulting? Write the classification of dip with neat sketches.

Unit-4

1. Explain a) Water table b) Cone of depression with neat sketches

2. Explain a) the geological control of ground water movement. b) Ground water exploration techniques.

3. a) Define an earthquake? and b) Explain Terminology and classification of earth quake.

4. Explain Richter scale intensity?

5. What are Shield and seismic areas & give the precautions of building construction in seismic areas

6. Define landslides? And explain classification of landslides.

7. a) What are the causes and effects of landslides?

b) What are the measures to be taken to prevent their occurrence at landslides?

Unit-5

1. What are the branches of geophysics? Give their necessity and importance of Geophysical investigations.
2. What are the geophysical methods? Give their classification.
3. Write the Principle, Parameters, Equipment and applications of Gravity and Magnetic Methods
4. Explain the principle, controlling factors of Electromagnetic Method of self-potential and Induced polarization Method
5. How do you evaluate the subsurface analysis using Electrical resistivity methods? Add a note on interpretation techniques of geophysical methods.
6. Write an essay on geophysical studies by electrical and seismic method and give their special importance of geophysical studies.
7. Discuss special geophysical importance of radiometric method and geothermal method.
8. Explain the types of electrode configuration, profiling, sounding and applications of resistivity methods and their importance of Civil Engineering?

Unit-6

1. Write the following: a) Purposes of tunneling b) Effects of tunneling
   c) Lining of tunnels d) Economic aspects of tunneling
2. Write types of dams? What are geological conditions necessary for the stability of dam?
3. What are the influencing factors for a successful reservoir? And explain.

4. Describe the geological consideration for successful tunneling.
5. Explain the geological causes for failure dams Quote a few case histories

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Department of Civil Engineering

III B.Tech (Civil) Sem-I QUESTION BANK

Subject: **Management Science (R16)**

Faculty: Mrs K. Chandrika, Asst. Professor, MBA Department

I UNIT

1. a) What is the significance of Hawthorne experiments for management?
   b) Define Management and explain its functions.
2. a) Define Management? Explain Henry Fayol's principles of management?
   b) Explain the importance of management in organisation?
3. a) Explain the nature of management.
   b) What are the challenges you have to face as a manager?
4. a) Describe the theory of scientific management and explain how it was criticized.
   b) What is matrix organization and what I its uniqueness.
5. a) Why is management considered as a profession and what factors make it a profession?
   b) Distinguish between Theory – X and Theory – Y?
6. a) What is motivation? Explain Abraham Maslow's needs Hierarchy theory.
   b) What do you mean by Functional organization structure? What are the advantages and disadvantages?

II UNIT

1. a) Describe the basic procedure to be followed in adopting work study techniques for Sound results?
   b) What is inventory? Explain the need for inventory control
2. a) What do you mean by EOQ? derive the formula for determining the EOQ.

b) Define control charts and explain its types

3. a) What s meant by materials management? state its advantages and disadvantages.

b) Explain the types of ABC analysis.

4. a) What is meant by integrated Materials Management? State its advantages

b) Discuss about various types of P chart, Rchart.

5. What is statistical quality control? How is this important in operations management?

III UNIT

1. a) State the importance and methods of job evaluation.

b) Define training and explain its methods.

2. a) What do you understand by marketing mix?

(b) Explain briefly the basic elements in marketing mix

3. a) Explain the functions of personnel management

b) Evaluate the different sources of recruitment

4. a) What do you understand by Human Resource Management?

b) Define Human Resource Development? Outline its concept.

5. a) Define Human Resource Management. Explain its functions

b) What are the differences between Human Resource Management and Personnel Management and Industrial Relations?

6. a) Discuss in brief about various wage payment plans? Are they relevant in present day Context.

b) What is product life cycle? Describe its stages.

IV UNIT

1. From the following information:

a) Draw the project network and find critical path.

b) Calculate earliest starting times and earliest finished times for each activity.

c) Determine Total, Free and Independent floats.

Activity	Immediate Predecessor	Duration
A	-	3
B	-	4
C	A	5
D	A	7
E	B,C	3
F	B,C,D	6

2. From the following information:

   a) Draw the network

   b) Find its critical path and project duration

   c) Determine Total, Free and Independent Floats.

Activity	Duration
1-2	5
1-3	4
2-4	6
3-4	2
4-5	1
4-6	7
5-7	8
6-7	4
7-8	3

4. From the following information:

(a) Draw the PERT network

b) Identify the critical path and projection duration.

Activity	To	Tm	Tp
1-2	3	3	3
2-3	3	6	9
2-4	2	4	6
3-5	4	6	8
4-6	4	6	8
5-6	0	0	0
5-7	3	4	5
6-7	2	5	8

5. a) What is CPM? Discuss its advantages and limitations.

   b) Distinguish between PERT and CPM.

6. a) What is PERT? State its advantages and limitations

   b) What is CPM? Explain its advantages.

V UNIT

1. (a) How do you formulate and implement strategy? Explain

   (b) What is the need for corporate planning process?

2. (a) what are the factors of external and internal environmental to be considered for formulating the strategy? Explain.

   (b). Explain various generic strategy alternatives in detail

3. (a) Define strategic management and describe the process of strategic management.

   (b) How do you carry out SWOT analysis for a manufacturing unit?

4. (a) What do you understand by the concept of strategy? Discuss the concept of Mission and Vision.

   (b). Discuss corporate planning process.

5. (a). Explain various external environment scanning techniques used by the organization

   (b) What is environmental scanning? How is this important in present day context.

VI UNIT

1. Write a notes on:

   (a) Capability Maturity Model (b) Balanced Score card.

2. Write a notes on :

   (a) Supply Chain Management b) Performance Management.

3 (a) What is Enterprise Resource Planning? Explain

   (b) Explain the merits and demerits of Enterprise Resource Planning.

4. (a) define total quality management and explain its significance.

(b) Write notes on six sigma

5. Write short notes on:
(a) Management Information System (b) Bench Marking.

6. Discuss the following;
a) Supply Chain Management b) Enterprise Resource Planning

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III B.TECH - I SEM Question Bank

Subject Name: SA-II **Branch: CIVIL** **Faculty: J.B.S.BHARATHI**

UNIT-1

1. A three hinged parabolic arch has span 12m and a central dip of 5m. The arch is hinged at the crown and springings. It carries a udl of 20kn/m run over the span. Calculate reactions at the support and also find bending moment, radial shear and normal thrust at a section 4.0m from the left support.

2. A three hinged circular arch has span 14.0m and a central rise of 6.0m. The arch is hinged at the crown and springing. It carries a point load of 20kN at 5.0m from the left support. Calculate the horizontal thrust, the reactions at the support and the maximum bending moment.

3. A three hinged parabolic arch of span 20.0m and rise 5.0m carries uniformly distributed load of 30 kN/horizontal meter run over the right half of the span. Calculate the support reactions and also find bending moment, radial shear and normal thrust at a section 10m from the right support.

4. A three hinged circular arch of span 30 m and rise 10 m carries uniformly distributed load of 50 kN/horizontal meter run over the left half of the span. Calculate the support reactions and also find bending moment, radial shear and normal thrust at a section 12m from the right support.

5. A two hinged circular arch of span 36 m and central rise 8 m. The arch is hinged at the ends. It carries uniformly distributed load of 40kN/m covers left hand half of the span.Calculate the position and magnitude of maximum bending moment. And also find shear force and normal thrust at the section. Assume that the moment of inertia at any section is Io *sec* where o is the inclination of the arch axis with horizontal and Io is the moment of inertia of the section at the crown

6. A two hinged parabolic arch of span 24 m and central rise of 4 m. The arch is hinged at theends. It carries uniformly distributed load of 25 kN/m run over the 10m from the right support toward the centre. Calculate the horizontal thrust, the reactions at the supports and the maximum bending moment. Assume that the moment of inertia at any section is *Io sec* where o is the inclination of the arch with horizontal and Io is the moment of inertia of the section at the crown.

7. A two hinged parabolic arch hinged at the supports has 60.0m span and rise 6.0m is subjected to 40kN at 3m from the right hinge. Find the reactions at the supports. Assume that the moment of inertia at any section is *Io sec* where o is the inclination of the arch axis with horizontal and Io is the moment of inertia of the section at the crown.

8. A two hinged parabolic arch of span 60 m and rise 10m. The moment of inertia at any section carries is equal to *Io sec* where *Io* =6,000,000cm4 is the moment of inertia at the crown and o is the slope of the section. Determine the horizontal movement between the constraints so that under a central point load of 40kN, the bending moment at the quarter points and crown are numerically equal. E=10kN/m2.

III B.TECH - I SEM Question Bank

Subject Name: SA-II **Branch: CIVIL** **Faculty: J.B.S.BHARATHI**

UNIT-II

Lateral Load Analysis Using Approximate Methods

1. Analyse the frame shown in Fig.1, using Portal Method

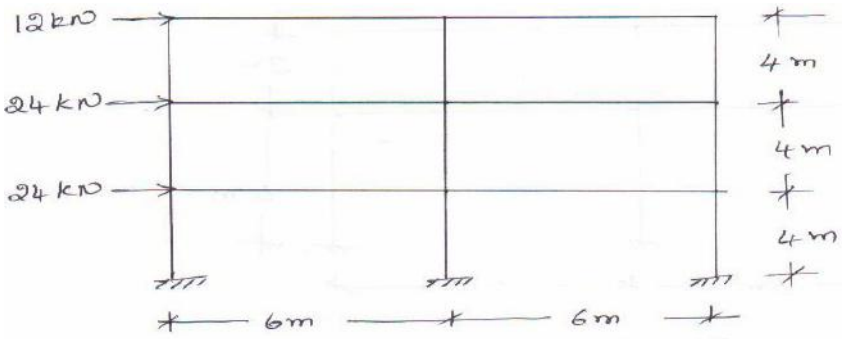

Fig-1

2. Analyse the frame shown in Fig.1, using Cantilever Method

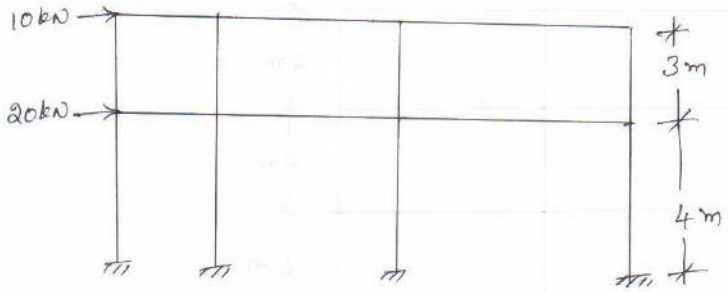

Fig-1

3. Analyse the frame shown in Fig.1, using cantilever method.

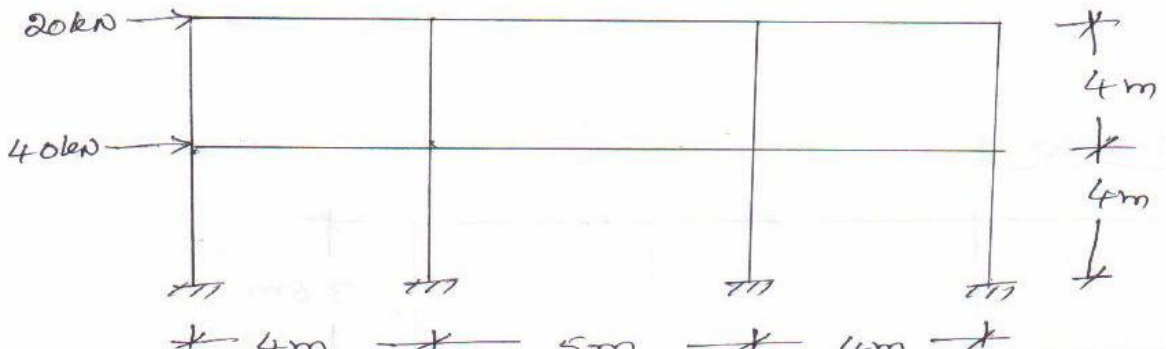

Fig-1

4. Analyse the frame shown in Fig.1, using portal method.

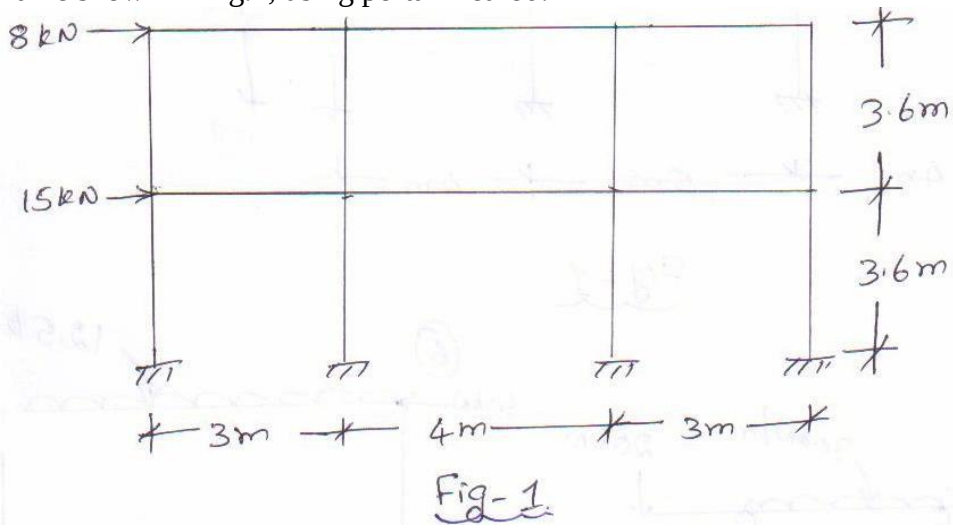

Fig-1

UNIT-III

Cable Structures And Suspension Bridges

1. A suspension cable having supports at same level has span of 25m and maximum dip of 5m**.**The cable is loaded with uniformly distributed load of 10kN/m throughout its length and the concentrated load of 20kN and 45kN at middle third points find the maximum tension in the cable.

2. The left support is 2.0m above right support. The cable is loaded with uniformly distributed load of 10kN/m throughout the span. The maximum dip in the cable from left support level is 6.0m. Find the maximum tension in the cable.

3. A suspension cable of 100m span and 15m dip is stiffened by a three hinged stiffening girder. It is subjected to a concentrated load of 125KN at 20m from left end in addition to a dead load of 10 kN/m. Find the maximum tension in the cable and the shear force and the bending moment in the girder at 15 m from the left end.

4. A suspension bridge has 60m span and supported by two cables with central dip of 8m dip. The bridge carries a uniformly distributed load of 30kN/m. The cables are attached to the saddles resting on rollers on the top of the piers and the anchor cables make an angle of 30° with vertical. Determine the tension in the anchor cables and the vertical pressure on the piers.

UNIT-IV

Moment Distribution Method

1. Analyse the beam shown in the Fig. by moment distribution method. Draw SFD & BMD

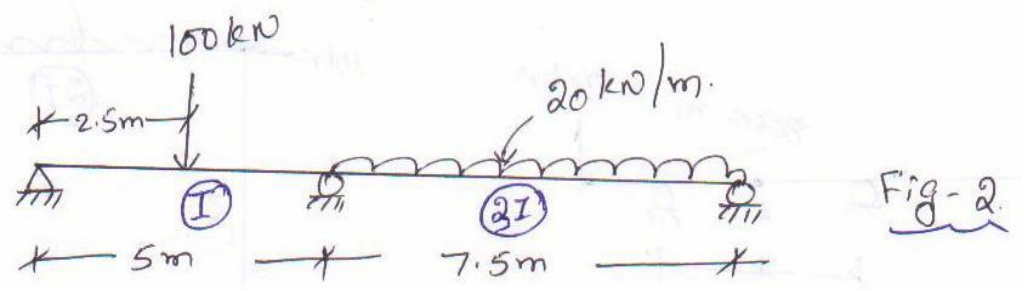

Fig-2.

2. Analyse the frame shown in the Fig.2, by moment distribution method. Draw SFD & BMD

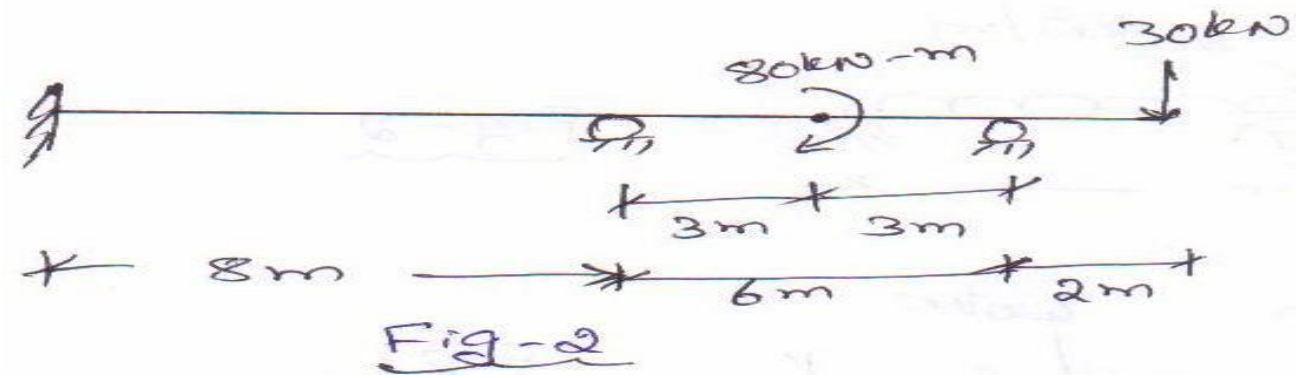

Fig-2

3. Analyse the frame shown in the Fig.2, by moment distribution method. Draw SFD & BMD

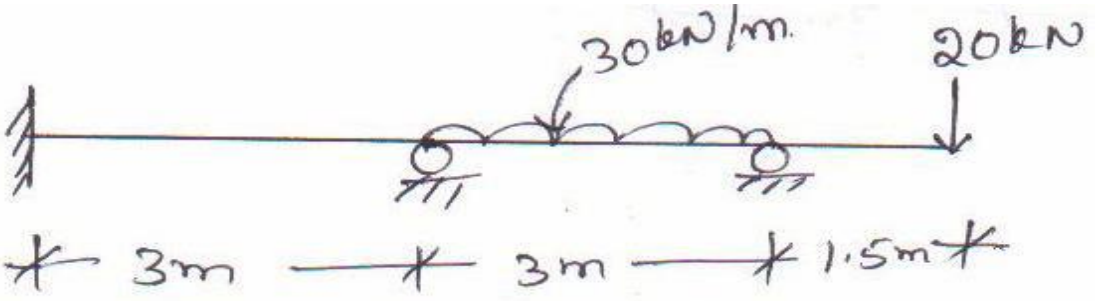

Fig-2

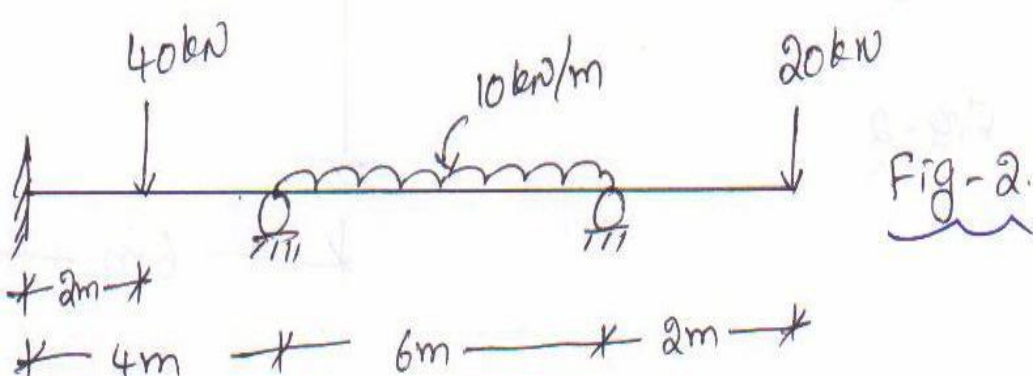

Fig-2

4. Analyse the frame shown in the Fig.2, by moment distribution method. Draw SFD & BMD

UNIT-V

Kani's Method

1. Analyse the beam shown in the Fig.3, by Kani's method.

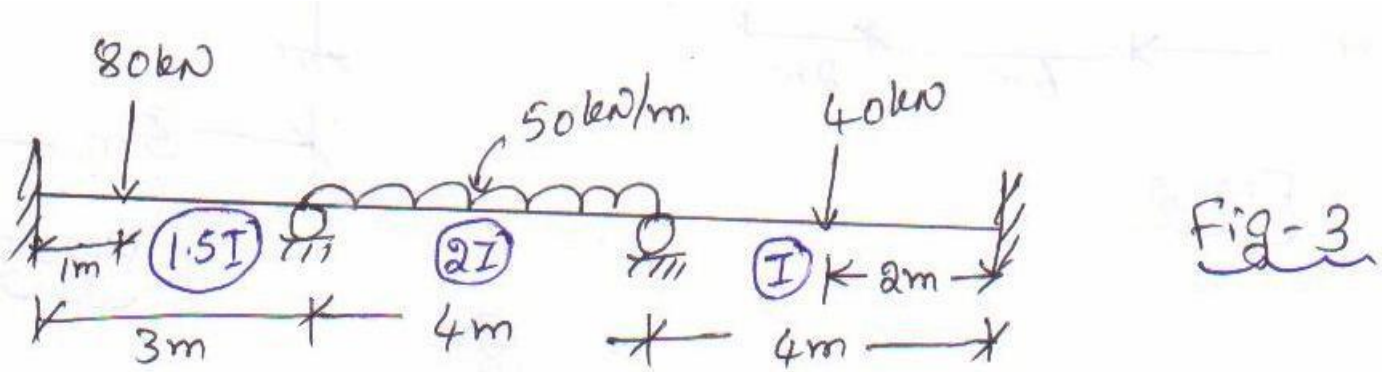

Fig-3

2. Analyse the frame shown in the Fig.3, by Kani's method.

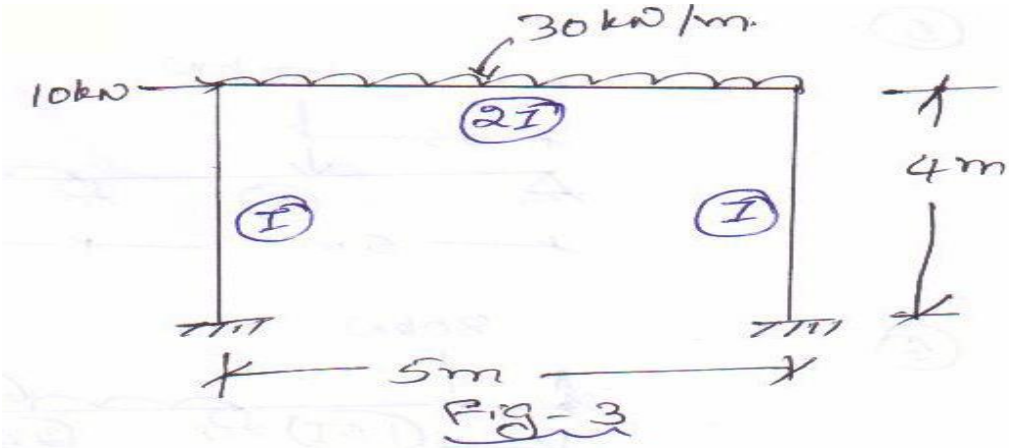

Fig-3

3. Analyse the frame shown in the Fig.3, by Kani's method.

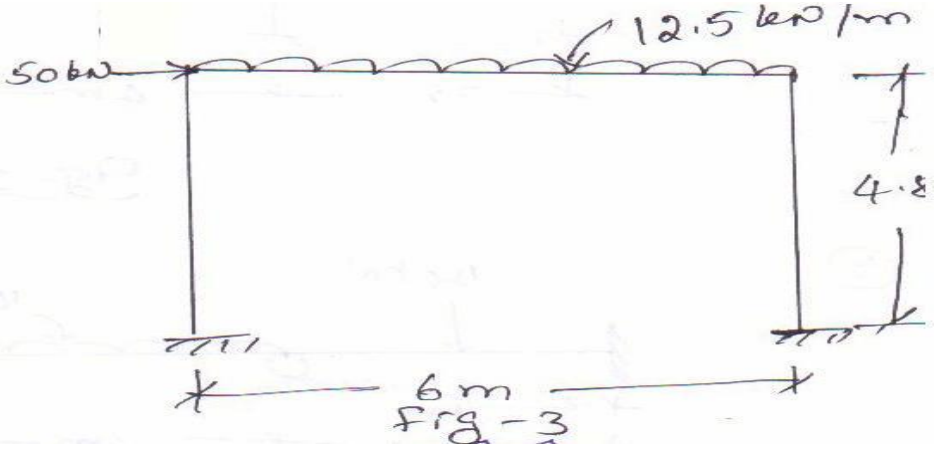

Fig-3

4. Analyse the beam shown in the Fig.3, by Kani's method.

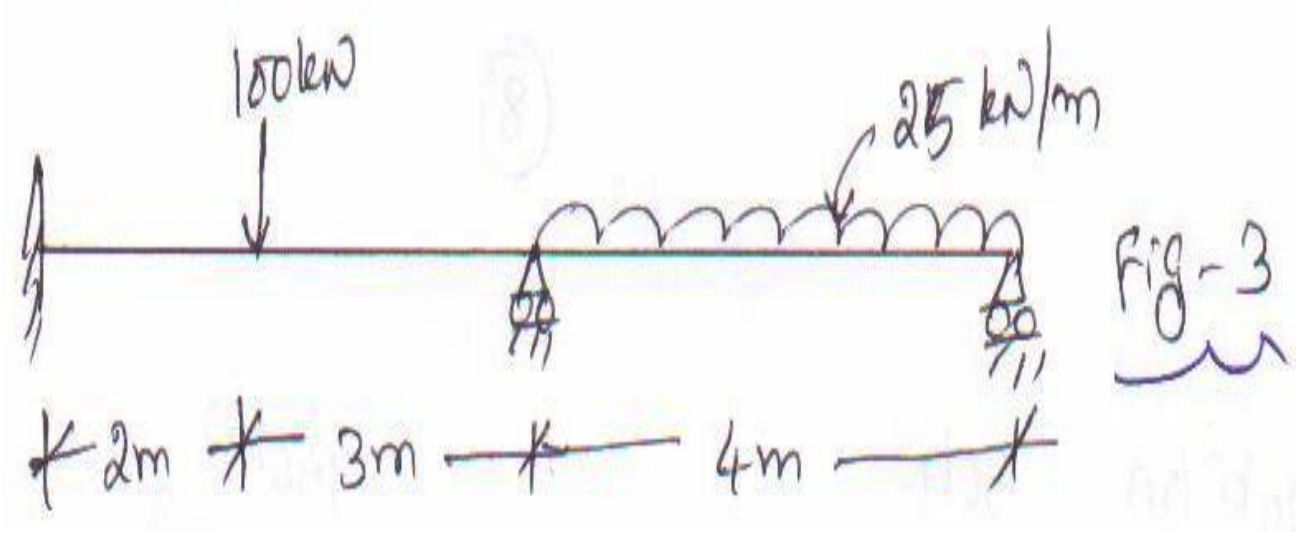

Fig-3

UNIT-VI

Introduction to Matrix Methods: Flexibility & stiffness method

1. Analyse the beam shown in the Fig.4 using flexibility method

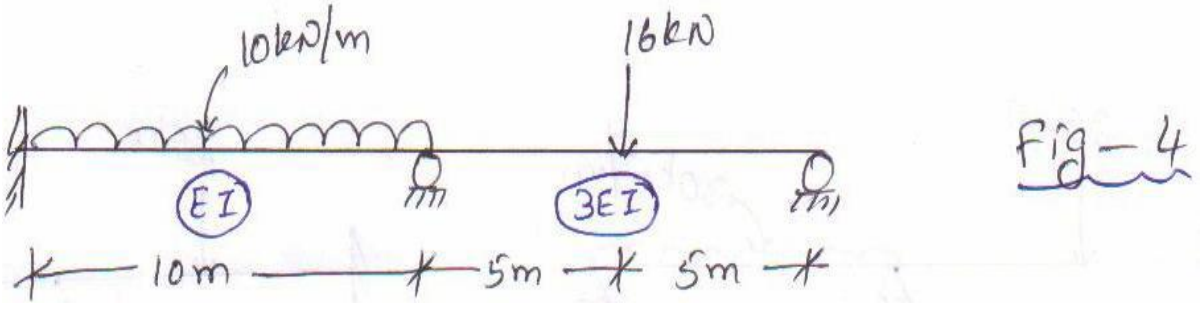

Fig-4

2. Analyse the beam shown in the Fig.4 using flexibility method

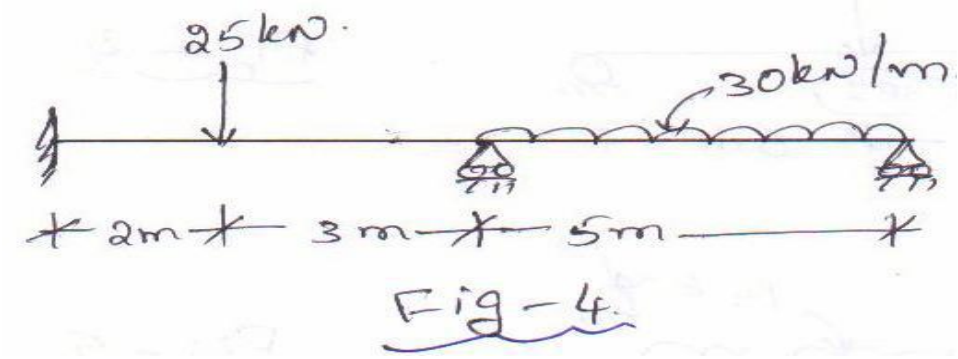

Fig-4.

3. Analyse the beam shown in the Fig.4 using flexibility method

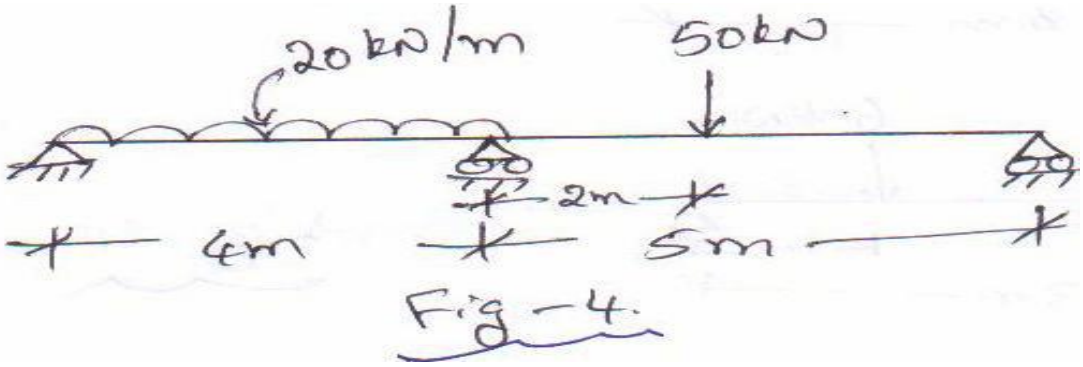

Fig-4.

4. Analyse the beam shown in the Fig.4 using flexibility method

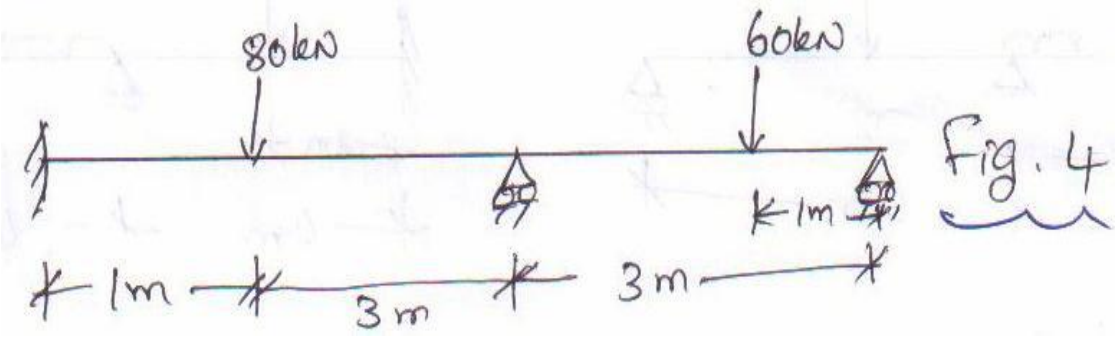

Fig. 4

1. Analyse the beam shown in the Fig.5, using stiffness method

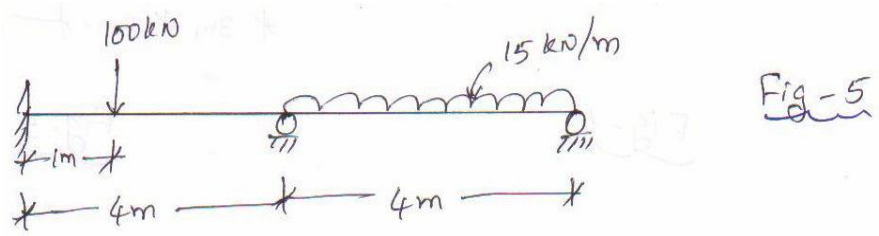

Fig-5

2. Analyse the beam shown in the Fig.5, using stiffness method

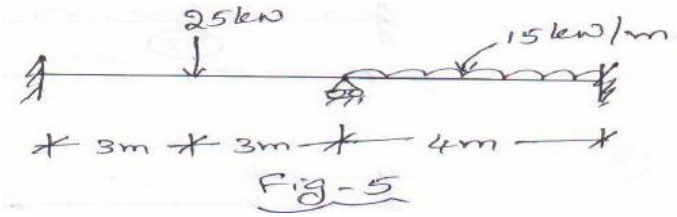

Fig-5

3. Analyse the beam shown in the Fig.5, using stiffness method

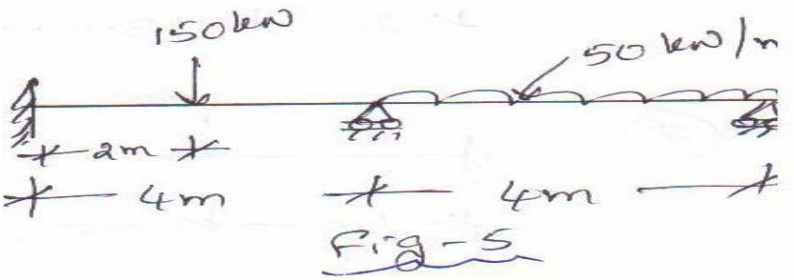

Fig-5

4. Analyse the beam shown in the Fig.5, using stiffness method

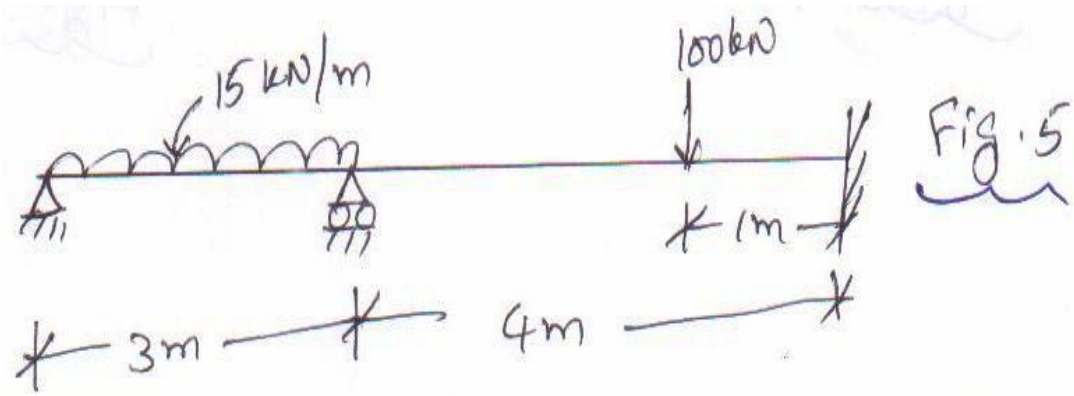

Fig.5

DADI INSTITUTE OF ENGINEERING & TECHNOLOGY

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NAME: B.RAMYA DEPARTMENT: CIVIL

DISSIGNATION: ASSISTANT PROFESSOR YEAR/SEM:III/I

SUBJECT : TRANSPORTATION ENGINEERING-II

UNIT:01 COMPONENTS OF RAIL WAY ENGINEEING

1. a) What are the requirements of an ideal permanent way? Explain.
   b) What is 'creep of rails'? Briefly discuss the theories related to the creep of rails.
2. Give a typical cross section of a permanent way on an embankment, indicate various components. Also describe the functions of various components of permanent way.
3. a) What are the functions of sleepers in a permanent way? Explain. Also give requirements of sleepers to fulfill these functions. b) What do you understand by 'adzing of sleepers'?
4. Explain the role of chairs, keys and fish plates as track fittings and fastenings. Support your answer with neat sketches.
5. a) What is sleeper density? What are the factors affecting on sleeper density?

   b) What are the components of railway track? Explain each and every component with neat sketches, functions of permanent way components
6. a) Define following terms, types and explain the merits, demerits and functions

   i) Sleeper ii) Rails, iii) Ballast

   b) Layout of permanent way
7. What is rail joint? Name the types of rails joints and describe the criteria for choosing a particular type.
8. Describe the classification of rail fastenings with the help of a diagram and state the functions of each type.

UNIT-02 GEOMETRIC DESIGN OF RAILWAY TRACK

1. What are the different gradients adopted in the geo metric design of a railway track? Factors affecting gradient.

2. a) What is the need for providing super elevation on curves of a railway track?
   b) Derive a relationship between the rate of super elevation, Gauge, speed and radius of the curve.
3. What is safe speed for a given railway track? On what factors safe speed depends? Explain the formulae used for computing the safe speed on curves as per Indian practice.
4. Explain about negative super elevation and the situation where negative super elevation is required in a railway track.
5. Derive an expression to determine cant or super elevation with reference to standard notations and geometric condition.
6. What is transition curve and what are the assumptions made with reference to its geometric condition.
7. What are the surveys conducted for railway track
8. Why the curves provided? Explain the different types of curves with neat sketch.

UNIT: 03 TURNOUTS AND CONTROLLERS

1. a) Define and state the different types of turnout. Define points and switches.
   b) Draw a typical sketch showing the complete set of track components for a turnout.
2. a) Define the following terms. I) crossing angle ii) facing angle iii) trailing angle iv) lead rail v) tie rod vi) switch angle vii) theoretical nose.
   b) Discuss the ideal and essential requirements of crossings and turnouts.
3. a) draw the neat sketch of left hand and right hand turnouts.
   b) Explain briefly scissors crossover, diamond crossover.
4. What is signaling and what are the objectives of signaling system?
5. a) List out the different types of signaling systems used in station yards.
   b) Explain the principals of interlocking.

UNIT: 04 AIR PORT PLANNING AND DESIGN

1. Explain the procedure for airport master plan and list out the objectives of airport planning.
2. What are the surveys conducted and the data collected for airport site selection? Factors affecting selecting the site for airport?
3. Define wind rose diagram and its uses? define taxiway
4. Explain the classification of runways.

5. What are the various factors governing the layout of taxiway? Write short note on terminal area.
6. Write a short note on visual aid ? what is the necessity of visual aids

UNIT:05 RUNWAY DESIGN

1. a) What are the different methods for design flexible pavements and explain any one briefly?
   b) Write a short note on rigid pavements.

2. a) Write a short note on the drainages for airports? List out the characteristics and requirements of airport design.
   b) Explain the design procedure for surface drainage.

3. a) Explain the LCN system for runway pavement design

   b) What are the air field failures?

4. What are the different steps for maintains and rehabilitation of air field pavements?

5. What are the evolution and strengthening of airfield pavements?

UNIT:06 DOCKS AND HARBOURS

1. What is meant by port and harbor? What are the different types of ports
   b) Requirements of good ports and harbours

2. What is meant by transition sheads and work houses?

   b) Explain about workhouses with a neat sketch.

3. Classification of harbours

4. a) Define break water what are the different types of break waters?

   b) What is dredging? What are the different types of dredges

5. What are the navigational aids why are they necessary in harbours?

6. a) write a short note on i) wharves ii) jetties iii) quay walls iv) tides

   b) Difference between jetty and wharves.