

Time: 3 hours

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

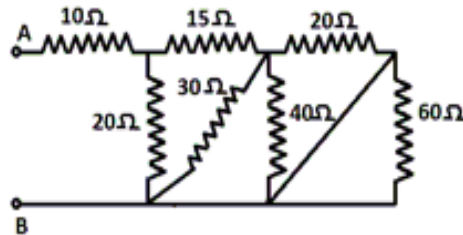
UNIT-I

1. a) Briefly explain the V-I characteristics of resistance, inductance and capacitance. [8M]

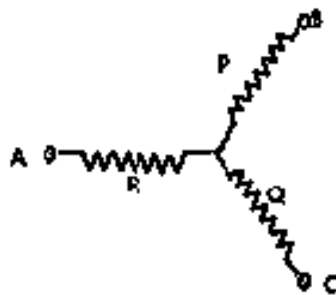
b) Derive the expression for equivalent capacitance when two capacitors are connected in series and connected in parallel? [6M]

(OR)

2. a) Determine the equivalent resistance between the terminals A and B in the following circuit. [6M]



b) Determine the equivalent delta connected network between the terminals A, B and C, where $P=10\Omega$, $Q=15\Omega$ and $R=20\Omega$. [8M]

**UNIT-II**

3. a) Derive the EMF equation of DC generator. [7M]

b) Explain the constructional features of DC generator. [7M]

(OR)

4. a) Explain armature control method for controlling speed of dc shunt motor. [7M]
5. b) Explain the procedure for conducting Swinburne's test on a dc shunt machine to determine the efficiency. [7M]

UNIT-III

6. a) Obtain the expression for voltage regulation of a single phase transformer. [7M]
- b) Explain various losses in a transformer. [7M]

(OR)

7. a) Explain how rotating magnetic field is developed in a three phase induction motor. [7M]
- b) Explain torque-slip characteristics of three phase induction motor. [7M]

UNIT-IV

8. a) Derive the EMF equation of alternator. [6M]
- b) A 3-phase 10KVA 400V 50Hz Y-connected alternator supplies the rated load at 0.8 p.f. lag. If armature resistance is 0.5Ω and synchronous reactance is 10Ω , find the voltage regulation. [8M]

(OR)

9. Explain the working principal of Moving Iron instrument with neat diagram. [14M]

UNIT-V

10. Explain the operation half wave and full wave rectifier with neat diagram. [14M]

(OR)

11. a) Explain the working of a P-N-P transistor with neat diagram. [7M]
- b) Draw the input and output characteristics of common base transistor configuration. [7M]

AR16

CODE: 16ME1001

SET-1

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)**

I B.Tech II Semester Regular Examinations, June-2017

**ENGINEERING DRAWING
(Electrical and Electronics Engineering)**

Time: 3 Hours

Max Marks: 70M

Answer ONE Question from each Unit

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UNIT-I

1. Construct a diagonal scale of 3:200 i.e. showing meters, decimeter and centimeter and to measure a distance upto 6m. Show a distance of 4m, 5dm, 6cm

(OR)

2. Draw a straight line AB of any length Mark a point F, 60mm from AB. Trace the path of a point P moving in such a way, that the ratio of its distance from the point F, to its distance from AB is 3:2 .Plot at least 10 points. Name each curve. Draw a normal and tangent to the curve at a point on it and 45mm from F.

UNIT-II

3. Draw the projections of the following points on a common reference line:
 - a. P, 25mm below the HP and in the VP
 - b. Q, 40mm behind the VP and in the HP
 - c. R, 30mm below the HP and 30mm in front of the VP
 - d. S, 25mm above the HP and 25mm behind the VP
 - e. T, 25mm above the HP and 30mm in front of the VP.
 - f. U, in both the VP and HP
 - g. V, 15mm below the HP and 25mm behind the VP

(OR)

4. A straight line GH has its end G is 15 mm above HP and 20 mm in front of VP. Its elevation has a length of 45 mm. The line is inclined at 50° to VP and parallel to HP. Draw its projections and find the true length of the line.

UNIT-III

5. Draw the projections of a rhombus, having diagonals 120mm and 60mm long and smaller diagonal is parallel to both the principal planes, while the longer diagonal is inclined at 30° to H.P

(OR)

6. A plate is of the shape isosceles triangle of base 60mm and altitude 80mm. Draw the projections of the plate, when it is placed such that the front view appears as an equilateral triangle of sides 60mm each and one of the plate edges makes 30° with the H.P.

UNIT-IV

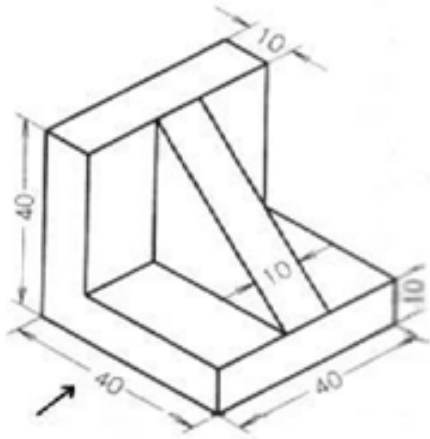
7. Draw the projections of a cylinder, base 30mm diameter and axis 40mm long, resting with a point of its base circle on HP, such that the axis is making an angle of 60° with HP.

(OR)

8. A hexagonal pyramid of base side 35mm and height 70mm rests on one of its base edges on the HP with its axis inclined at 30° to the HP and parallel to the VP. Draw its projections.

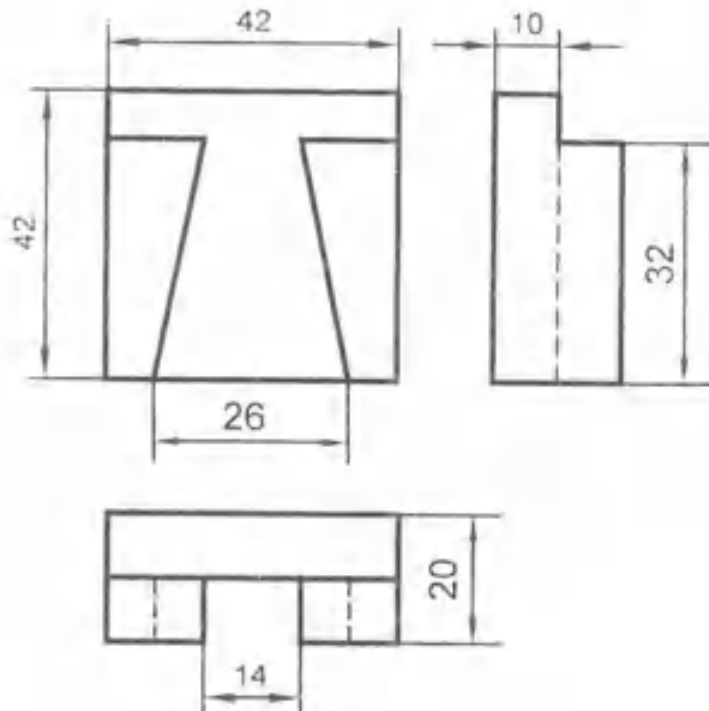
UNIT-V

9. Draw all three Views



OR

10. Draw the isometric view of orthographic drawing shown below.



UNIT-I

1. a Inscribe a hexagon in a circle of 50 mm diameter **4 M**
b Construct a scale of 1:4, to show centimetres and long enough to measure up to 5 decimetres. Mark a distance of 3.7 decimetres on it. **10 M**

(OR)

2. A circle of 50mm diameter rolls along the floor for one revolution without slipping. Draw the curve traced out by a point on the circumference of the circle. Also draw a normal and tangent at any point on the curve. **14 M**

UNIT-II

3. Draw the projections of points whose positions are given below **14M**
i. Point A is 30 mm above HP and 30mm behind VP
ii. Point B is 25mm below HP and in VP
iii. Point C is 28mm above HP and 35mm in front of VP
iv. Point D is in HP and in VP

(OR)

4. a Draw the projections of a 80mm long straight line when the line is Perpendicular to HP in VP and its one end in HP. **4 M**
b A 100mm long line is parallel to and 25mm above HP. Its two ends are 25mm and 40mm in front of VP respectively. Draw its projections and find its inclination with VP. **10 M**

UNIT-III

5. Draw the projections of a circle of 75 mm diameter having the end A of the diameter AB in the H.P., the end B in the V.P. and the surface inclined at 30 degrees to the H.P. and at 60 degrees to the V.P. **14 M**

(OR)

6. A thin $30^\circ - 60^\circ$ set square has its longest edge 50 mm (diagonal) on H.P. and inclined at 30° to V.P. Its surface makes an angle 45° with H.P. Draw the projections. **14 M**

UNIT-IV

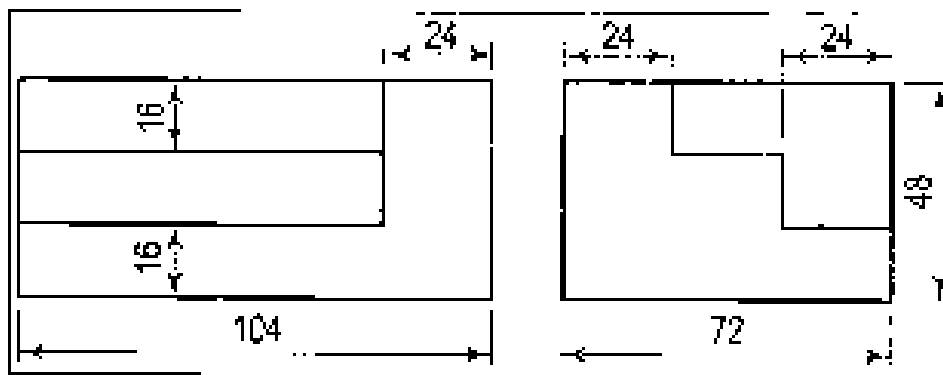
7. A cylinder 50mm base diameter 80mm long is having **14M** its axis parallel to VP and inclined 30 degrees to HP. Draw its projections.

(OR)

8. A regular pentagonal prism, side of base 40 and length of axis 80mm lies with one of its rectangular faces on the ground and the axis inclined at 40 degrees to the VP. Draw the projections of the prism **14M**

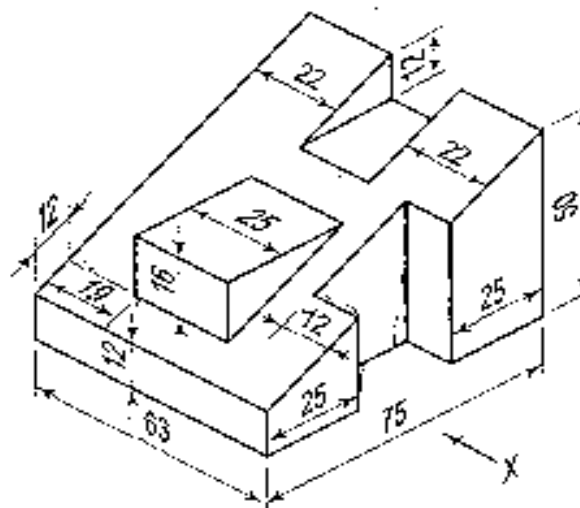
UNIT-V

9. Draw the Isometric view for the following Figure **14M**



(OR)

10. Draw the Front , Top and Side views for the following Figure **14M**



AR16

CODE: 16CS1002

SET-2

**ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)**

I B.Tech II Semester Regular Examinations, June-2017

Data Structures

(Common to CSE, IT Branches)

Time: 3 Hours

Max Marks: 70

Answer ONE Question from each Unit

All Questions Carry Equal Marks

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UNIT-I

1. a Define and explain the operations and types of Data structure **8**
b Write a non-recursive algorithm to compute GCD? **6**
- (OR)**
2. a What is meant by recursion? Write a recursive algorithm to generate Fibonacci sequence? **9**
b Differentiate between time complexity and space complexity **5**

UNIT-II

3. a Explain about different searching mechanisms. **7**
b Write a program for sorting the given elements using insertion sort. **7**
- (OR)**
4. a Explain Divide and Conquer algorithmic strategy using Merge Sort as an example. **7**
b Write an algorithm to implement Binary Search technique. **7**
Use the algorithm to search 32 in the following list of elements. Explain the process at each step. 12, 16, 17, 19, 20, 22, 24, 29, 30, 32, 37

UNIT-III

5. a List out the applications of stack. Consider the usual algorithm for determining whether a sequence of parentheses is balanced. What is the maximum number of parentheses that will appear on the stack AT ANY ONE TIME when the algorithm analyzes: (() (()) (()))? **7**
b What is Queue? What are the applications of Queue? Explain. **7**
- (OR)**
6. a Discuss about the stack with examples **7**
b Write an algorithm to implement queue using stack. **7**

UNIT-IV

- | | | |
|-------------|---|-----------|
| 7. | Explain and write pseudo code for creation, insertion and deletion operations on circular linked list? | 14 |
| (OR) | | |
| 8. | a What is linked list? Write an algorithm for inserting an element E at the given position P of the linked list. | 7 |
| | b Discuss the advantages and disadvantages of representing a group of items as an array versus a linear linked list | 7 |

UNIT-V

- | | | |
|-------------|---|----------|
| 9. | a Explain about the creation of binary tree using the preorder and postorder traversals | 7 |
| | b Write a algorithm for the creation of binary tree using the preorder and postorder traversals | 7 |
| (OR) | | |
| 10. | a Define a Graph. Explain various graph representations.. | 7 |
| | b Write an algorithm for DFS with example. | 7 |