AR16

CODE: 16EE1004 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

I B.Tech II Semester Supplementary Examinations, August-2017

Basic Electrical &Electronics Engineering

(Common to Civil & MECH branches)

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	Define and explain Ohm's Law with a circuit	**6M**
	b	Explain Kirchhoff's laws with a circuit	**8M**

(OR)

2.	a	Explain the star-delta and delta-star transformation for a resistive network	**6M**
	b	Two resistors 4 Ωand 6Ω are connected in parallel. If the current supplied by source is 30 A. Find the equivalent resistance and current through each branch.	**8M**

UNIT-II

3.	a	Derive the torque equation of a DC motor?	**6M**
	b	Calculate the generated emf of a 4-pole, wave-wound armature having 38 slots with 18 conductors per slot when drive at 1000rpm. The flux per pole is 0.018wb.	**8M**

(OR)

4.	a	Explain the operation of 3-point starter in a DC machine	**8M**
	b	A 6-pole generator has a lap-wound armature with 40 slots with 20 conductors per slot. The flux per pole is 25 mWb. Calculate the speed at which the machine must be driven to generate an e.m.f. of 300 V.	**6M**

UNIT-III

5.	a	Explain the working principle of single phase transformer	**6M**
	b	Explain various losses in a single phase transformer.	**8M**

(OR)

6	a	Draw and explain slip-torque characteristics of an induction motor.	**6M**
	b	The frequency of the supply to the stator of a 6-pole induction motor is 50 Hz and the rotor frequency is 2 Hz. Determine (i) the slip, and (ii) the rotor speed in rev/min.	**8M**

UNIT-IV

7.	a	Explain the construction of an alternator with the help of a neat sketch	**7M**
	b	Derive the emf equation an alternator	**7M**

(OR)

8.		**D**iscus the principle of operation of moving iron instruments and list out the advantages and disadvantages.	**14M**

UNIT-V

9.		Explain briefly the action of a p-n junction diode: (a) on open-circuit, (b) when provided with a forward bias and (c) when provided with a reverse bias. Sketch the characteristic curves for both forward and reverse bias conditions.	**14 M**

(OR)

10.	a	Draw the circuit diagram of half wave rectifier and explain its operation.	**7M**
	b	Draw the physical structure of a NPN transistor and explain the operation	**7M**

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AR16

CODE: 16ME1001 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI

(AUTONOMOUS)

I B.Tech II Semester Supplementary Examinations, August-2017

ENGINEERING DRAWING

(Common to EEE & ECE)

Time: 3 Hours **Max Marks: 70M**

Answer ONE Question from each Unit

All Questions Carry Equal Marks

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

UNIT-I

1. The major axis of an ellipse is 150mm long and the minor axis is 100mm long. Find the foci and draw the ellipse by 'OBLONG METHOD'. Draw a tangent to the ellipse at a point on it 25mm above the major axis. **14M**

(OR)

2. Construct a Hyperbola using general method when the distance of the focus from the directrix is 65mm and the eccentricity is 3/2. Draw a normal and a tangent at a point on the curve 75mm from the directrix. **14M**

UNIT-II

3. A point "p" is in the first quadrant. Its shortest distance from the intersection point of H.P, V.P and auxiliary vertical plane, perpendicular to the H.P and V.P is 70mm and it is equidistant from principal planes (H.P & V.P). Draw the projections of the point and determine its distance from the H.P and V.P? **14M**

(OR)

4. a. The length of the top view of a line parallel to the V.P and inclined at 45° to the H.P is 50mm. One end of the line is 12mm above the H.P and 25mm in front of the V.P. Draw the projections of the line and determine its true length? **7M**

   b. The front view of a 75mm long line measures 55mm. The line is parallel to the H.P and one of its ends is in the V.P and 25mm above the H.P. Draw the projections of the line and determine its inclination with the V.P? **7M**

UNIT-III

5. A Pentagonal plate of 45mm has a circular hole of 40mm diameter in its centre. The plane stands on one of its sides on the H.P with its plane perpendicular to V.P and 45° inclined to the H.P. Draw its projections. **14M**

(OR)

6. A Square ABCD of 50mm side has its corner A in the H.P, its diagonal AC inclined at 30° to the H.P and the diagonal BD inclined at 45° to the V.P and parallel to the H.P. Draw its projections. **14M**

UNIT-IV

7. A Square Pyramid, base 40mm side and axis 90mm long, has a triangular face on the ground and the vertical planes containing the axis makes an angle of 45° with the V.P. Draw its projections. **14M**

(OR)

8. 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. **14M**

UNIT-V

9. Draw the 1) Front View 2) Top View 3) Left hand side View of block shown in fig.01 **14M**

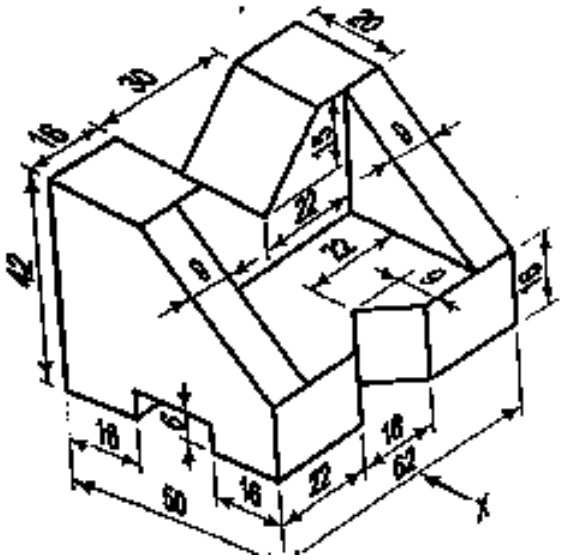

Fig 01

(OR)

10. Draw the isometric projection of the component shown in Figure 2. **14M**

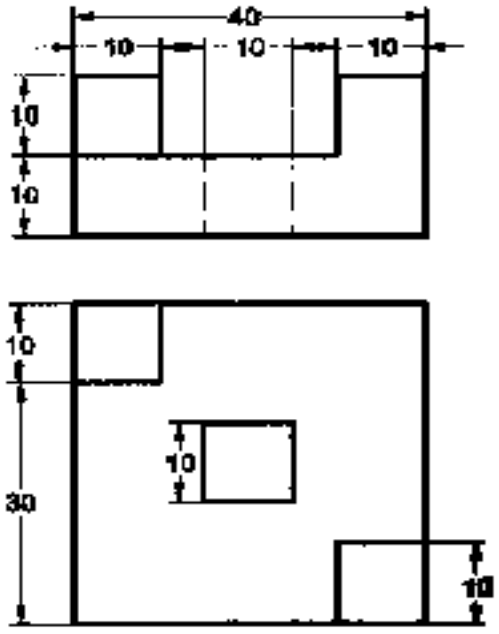

Fig 2

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AR16

CODE: 16CS1002

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)

I B.Tech II Semester Supplementary Examinations, August-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
All parts of the question must be answered in one place only

UNIT–I

1. a. What is a Recursion? Write C programs to generate a Fibonacci series using recursive function. 7M
   b. Define and explain the operations of data structure. 7M

(OR)

2. a. explain the linear and binary recursion with examples 7M
   b. Define data structures. What are the differences between linear and Non-Linear Data Structures 7M

UNIT–II

3. a. Write an algorithm for linear search and explain with an example? 7M
   b. Show how split an merge take place when merge sort is applied on the following list of numbers: 39,9,81,45,90,27,72,18. 7M

(OR)

4. a. Write a C program to search an element in an array using Binary Search. 7M
   b. Define sorting? Explain the differences between bubble sort and quick sort. Which One is more efficient? 7M

UNIT–III

5. a. Write a C program that implement stack operations using arrays 7M
   b. Define a Stack and explain the application of Stack 7M

(OR)

6. a. Explain the conversion procedure from infix expression to postfix expression. 7M
   b. Explain the queue operations and array representation in Queue. 7M

AR16

CODE: 16CS1002

UNIT–IV

7. a. Write a C program to implement various operations on a single linked list. 7M
   b. Write algorithms to insert into and delete elements from a doubly linked list. 7M

(OR)

8. a. Give the linked representation of the following polynomial: $7x^2y^2-8x^2y+3xy-11x-4$. 7M
   b. Write the procedure for inserting a node in the linked list at given position. 7M

UNIT–V

9. a. Differentiate binary tree and binary search tree 4M
   b. Given an expression Exp=((a+b)-(c*d))%((e^f)/(g-h)),construct the corresponding binary tree. 3M
   c. write a non recursive algorithm for post order traversals with example. 7M

(OR)

10. a. Define a Graph? Explain Adjacent Matrix representation with example? 10M
    b. Write a program to implement the Breadth First search algorithm. 4M