AR13

Code: 13ME1001 **SET-1**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I B.Tech I Semester Supplementary Examinations, November-2016

ENGINEERING DRAWING
(Common to Civil, ME, CSE, IT)

Time: 3 hours **Max Marks: 70**

PART-A

Answer all questions **[10 x 1=10M]**

1. a) What are different types of dimensional systems?
b) Define plain scale
c) Define first angle projection
d) What is the principle of projection?
e) What is a profile plane?
f) When a plane is perpendicular to both HP and VP its true length is shown in --- view
g) Define cone
h) Define prism
i) Define Isometric view
j) What are the different methods of projections?

PART- B

Answer one question from each unit **[5 x12=60M]**

UNIT - I

2. Construct a scale of R.F. = 1/2.5 to show decimeters and centimeters and by a Vernier to read millimeters, to measure up to 4 decimeters. Show lengths representing 2.38 decimeters and 0.81decimeters

(OR)

3. Draw ellipse by concentric circles method. Take major axis 100 mm and minor axis 70 mm long**.**

UNIT - II

4 **(a).** A point B is 40 mm from HP & 25 from VP. Draw its projections in all possible positions
(b). Project the following points and specify the quadrants

i) A Point P plan is 40mm above XY and the elevation is 20mm below the plan.
ii) A Point Q its projections coincide with each other and 30 mm below XY.

(OR)

5. a) A line PQ, 9 cm long, is in the H.P. and makes an angle of 30^0 with the V.P. Its end P is 2.5 cm in front of the V.P. Draw its projections.

b) The front view of a 7.5 cm long line measures 5.5 cm. The line is parallel to the H.P. and one of its ends is in the V.P. and 2.5 cm above the H.P. Draw the projections of the line and determines its inclination with the V.P.

UNIT- III

6. 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 30^0 to H.P.

(OR)

7. A regular hexagon of 40mm side has a corner in the H.P. Its surface is inclined at 45^0 to the H.P. and the top view of the diagonal through the corner which is in the H.P. makes an angle of 60^0 with the V.P. Draw its projections.

UNIT - IV

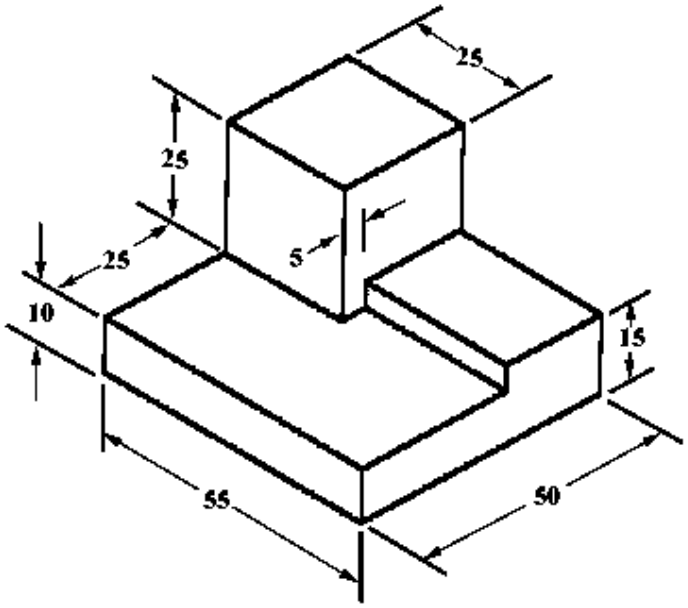
8. Draw the projections of a hexagonal pyramid with side of base 30mm and axis 70mm long. Which is resting with a slant face in H.P. such that the axis is parallel to V.P.

(OR)

9.A cone of diameter of base 60 mm and axis length equal to 100 mm rests on one of its slant generators on H.P. such that its axis is inclined at an angle of 65° with the V.P. Keep its apex near to the V.P. and draw the projections.

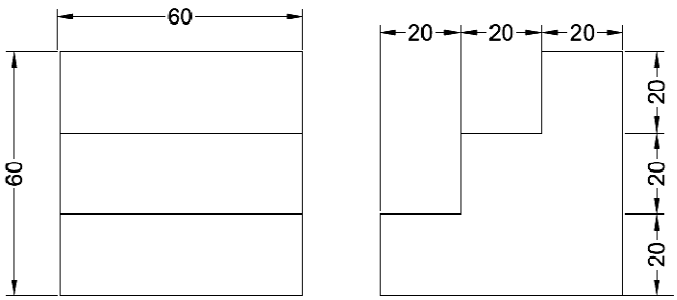
UNIT - V

10. Draw the front view, top view and left hand side view of the block shown in figure shown below.



(OR)

11. Draw the isometric projection of the block whose orthographic projections are shown in figure below.



AR13

CODE: 13EE1001 **SET-2**

ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I B.Tech I Semester Supplementary Examinations, November-2016

FUNDAMENTALS OF ELECTRICAL ENGINEERING
(Electrical and Electronics Engineering)

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

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

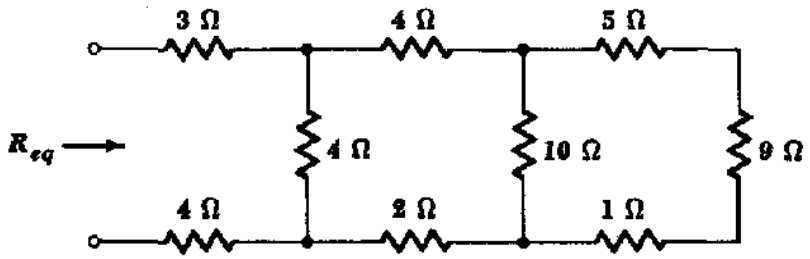
1. a) What is a passive element?
   b) Explain the ramp input?
   c) Explain J notation?
   d) Explain the concept of phasor?
   e) What is magnetic permeability?
   f) Explain coefficient of coupling?
   g) Advantage of MI type instrument
   h) What property spring material used in spring control device has?
   i) What is the use of ceiling roses?
   j) Why adaptors are used?

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

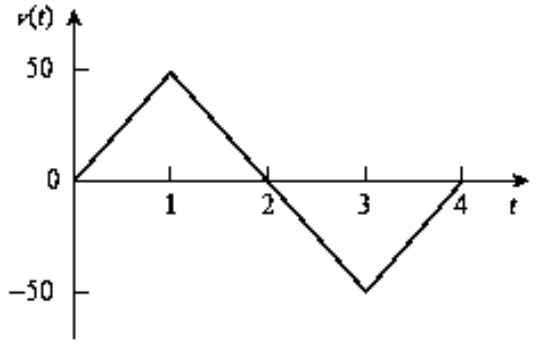
2. a Find R_{eq} for the network of fig (a) as it is shown (b) with the 5Ω resistor replaced by a short circuit (c) with the 5Ω resistor replaced by an open circuit? 7M



b State and Explain Ohms law? 3M

(OR)

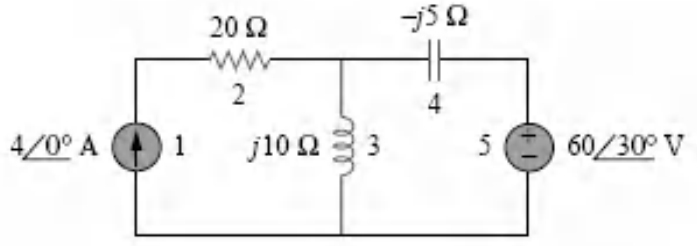
3. a Determine the current through a 200μF capacitor whose voltage is shown in fig? 6M



b Write short note on dependent and independent sources? 6M

UNIT-II

4. a Determine the power generated by each source and the average power absorbed by each passive element in the circuit? 10M



b Write short notes on complex power? 2M

(OR)

5. Explain the sinusoidal response of series RLC circuit and derive necessary expressions? 12M

UNIT-III

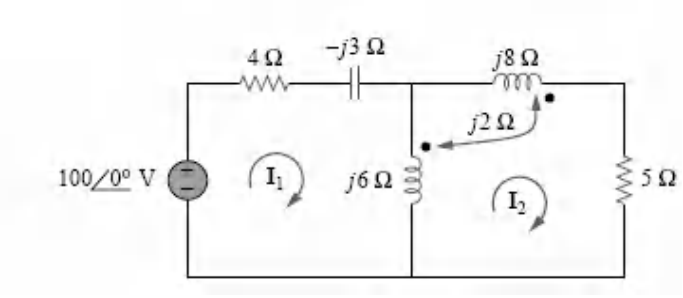
6. a Compare Electric and Magnetic circuits? 6M

b An iron ring has a mean circumferential length of 60 cm and a uniform winding of 300 turns. An air gap has been made by a saw cut across the section of the ring. When a current of 1A flows through the coil, the flux density in the air gap is found to be 0.126 m web/m^2. How long is the air gap? Assume iron has a relative permeability of 300. Also calculate reluctance? 6M

(OR)

7. a Explain magnetic leakage and fringing? 6M

b Calculate the mesh currents? 6M



UNIT-IV

8. Describe the constructional details of an attraction type moving iron instrument with the help of a neat diagram. Derive the equation for deflection if spring control is used and comment upon the shape of scale? 12M

(OR)

9. a Explain the principle of indicating instruments? 4M

b Explain the different methods of producing controlling torque in an analog indicating instrument. List their advantages and disadvantages? 8M

UNIT-V

10. Explain in detail the estimation of cost selection of interior wiring system suitable to a given building? 12M

(OR)

11. Draw the wiring layout for a living room? Explain 12M

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ADITYA INSTITUTE OF TECHNOLOGY AND MANAGEMENT, TEKKALI
(AUTONOMOUS)
I B.Tech I Semester Supplementary Examinations, November-2016

ELECTRONIC DEVICES
(Electronics and Communication Engineering)

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

PART-A

ANSWER ALL QUESTIONS **[1 x 10 = 10 M]**

1. a) What is perpendicular electric and magnetic fields?
   b) What is the need of aquadog coating?
   c) What is mean lifetime of an electron?
   d) What is Hall voltage?
   e) What are the applications of tunnel diode?
   f) What is regulation and percentage of regulation?
   g) What is transistor emitter efficiency?
   h) What is transistor injection efficiency?
   i) Define mutual conductance of FET?
   j) What are the uses of FET?

PART-B

Answer one question from each unit **[5x12=60M]**

UNIT-I

2. a) Derive the expression for magnetic-deflection sensitivity of CRT **6M**
   b) Draw the block diagram of CRO and explain its operation? **6M**

(OR)

3. a) Derive the relation between electric field intensity and potential **4M**
   b) Show that the particle moves in a parabolic path in the region between the two parallel plates? **8M**

UNIT-II

4. a) Show that the exact position of Fermi level in an n-type material? **6M**
   b) What is intrinsic and extrinsic semiconductors and compare? **6M**

(OR)

5. a) What are the applications of Hall effect and describe a method of determination of n- type of materials. **6M**

b) What are the current components in a p-type and n-type semiconductor? Explain. **6M**

UNIT-III

6. a) What are the current components in a p-n diode? Explain. **6M**

b) Explain diffusion capacitance and dynamic resistance of diode. **6M**

(OR)

7. a) Design full wave rectifier for 12V DC output. **8M**

b) What is Zener break down? How it is different from avalanche break down. **4M**

UNIT-IV

8. a) Explain current components and parameters of transistor? **10M**

b) List the specifications of transistor? **2M**

(OR)

9 a) Explain in detail about CE configuration with characteristics . **9M**

b) Explain how the transistor acts as an amplifier? **3M**

UNIT-V

10. a) What is JFET? Explain its characteristics? **6M**

b) What is V-grove MOSFET? Explain its merits. **6M**

(OR)

11. a) What is Dual Gate MOSFET? Compare with FET and MOSFET? **6M**

b) Explain any two characteristics and two applications of UJT. **6M**

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