BITT Polytechnic Ranchi-835217
Department Of Electrical Engineering

Assignment Questions
Branch: Electrical Engineering Semester: 4th
Subject: Power System-I (ELE 406)

<u>**Answer all questions**</u>

1. Why is electrical energy preferred over other forms of energy?

2. Write a short note on the generation of electrical energy.

3. Discuss the different sources of energy available in nature.

4. What factors are taken into account while selecting the site for a steam power

   station?

5. Draw the schematic diagram of a modern steam power station and explain its

   operation.

ALL THE BEST

Answer all questions:

1. Differentiate between 'Analog' and 'Digital'.

2. Explain the difference between positive and negative logic.

3. What is the weight of the digit 6 in each of the following decimal numbers?

a) 1386 b) 54692 c) 671920 d) 56892 e) 1268954

4. Convert each decimal number to binary number:

a) 59 b) 84 c) 251 d) 362 e) 450 f) 36.25 g) 45.375 h) 125.3125 i) 75.625 j) 66.246

5. Convert each binary number to decimal number:

a) 10101 b) 11101 c) 10111 d) 1110010 e) 10101011 f) 110011.11 g) 1111000.101 h) 110110.011 i) 1011010.1010 j) 111111.1111

6. Convert each decimal number to hexadecimal number:

a) 52 b) 284 c) 2890 d) 4019 e) 6500

7. Convert each hexadecimal number to decimal number:

a) 23 b) 1A c) 8D d) F3 e) 5C2 f) 700 g) FB17 h) A14 I) 4100 j) 8A9D

8. Convert each hexadecimal number to binary number: a) 38 b) A14 c) 5C8 d) FB17 e) 4100 f) 8A9D g) 59 h) 10A4 i) CF8E j) 9742

9. Convert each binary number to hexadecimal number: a) 1110 b) 10111 c) 10100110 d) 1111110000 e) 100110000010 f) 1100101001010111 g) 11111100010100 h) 10011101001 i) 10110111101 j) 011011000101

10. Convert each decimal number to octal number: a) 98 b) 163 c) 256 d) 458 e) 652

11. Convert each binary number to octal number: a) 110111 b) 101010 c) 1011110 d) 101100011001 e) 10110000011 f) 111100010110001

12. Convert each octal number to binary number: a) 57 b) 101 c) 540 d) 4653 e) 13271 f) 45600 g) 100213

13. Perform the operations as indicated:

a)111 + 1011 b) 1010100 + 0110101 c) 1011011 + 1101110 d) 0111010 + 111111
e) 1100 – 1001 f) 11010 – 10111 g) 101100 – 011011 h) 110010 – 100111 i) 100 × 10
j) 111 × 101 k) 1001 × 110 l) 1110 × 1101 m) 1001 ÷ 11 n) 1100 ÷ 100 o) 1100 ÷ 011
p) 10111 ÷ 1

Assignment Questions

Branch: Electrical Engineering Semester: 4th

Subject: Electrical Machine-I

1. An 8-pole lap wound dc gen has armature conductor has 960,flux 40mWb and speed 400

rpm .calculate emf generated .If same armature is wave wound at what speed should be

driven to produced 400 volt

2. Application of dc generator

3. Characteristics of dc generator

    a) Magnetization characteristics

    b) Internal characteristics

    c) External characteristics

4. Armature reaction

Part- A

Note:- Solve any Three questions

Q1. Find the Laplace transform of the following

(a) $\cos(t - a)$ $t > a$

(b) $\sin\left(t - \frac{\pi}{4}\right)$ $t > \frac{\pi}{4}$

Q2 Find the Laplace transform of the following

(a) $\frac{1-e^{-t}}{t}$

(b) $\frac{e^{-at} - e^{-bt}}{t}$

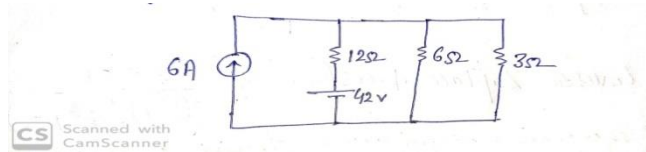Q3. Find the Laplace transform of the following

(a) $\int_0^t e^{-2t} \ t^3 \ dt$

(b) $\int_0^t e^{-4t} \ \sin 3t \ dt$

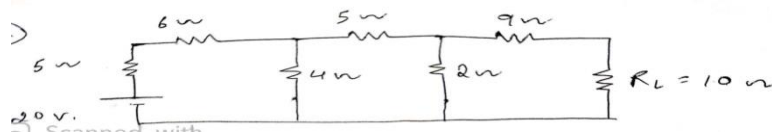Q4. . Find the Inverse Laplace transform of $\frac{3s+1}{(s+1)(s^2+2)}$

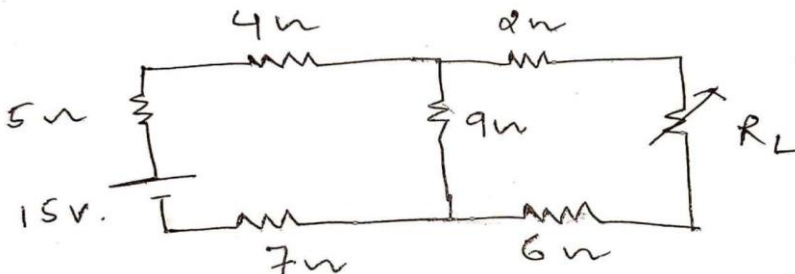**Part B**

Note:- All questions are compulsory

Q5. Find the current through the 3Ω resistor in fig. shown below.

Q6. Find the Thevenin's equivalent circuit for the following diagram.

Q7. Find the value of R_L for maximum power transfer in the following circuit

Assignment Questions

Branch: Electrical Engineering Semester: 4th

Subject: Electrical Estimation and Costing (ELE- 405)

1. Write about the general rules for wiring of residential installation.

2. Explain earthing of an electrical installation.

3. Discuss the classification of installation diagram and explain in briefly about each.

4. Explain about the over head service connection and under ground service connection.

5. Explain about mounting arrangements positioning of switch board and distribution boards , main switch in a residential building .

6. Draw the following diagram:

   i.   One lamp controlled by a two switches.

   ii.   Series parallel circuit, both lamps either in series or in parallel.

   iii. Godown wiring.