

## Question bank ME4G

### Electrical Engineering (17404)

#### 3 marks questions

Q1.explain meaning of:

- i) Generation of electricity
- ii) Transmission of electricity

Q2. Compare ac supply and DC Supply.

Q3. A Pure resistance R is connected in series with a coil of pure inductance L connected to AC supply V

- i) Draw the circuit diagram showing current, voltage.
- ii) Draw the waveform for same..

Q4. Draw a neat circuit diagram of delta connected load having each phase of  $3\Omega$  resistance and  $4\Omega$  inductive reactance.

Q5. Define following terms related to AC quantity : Waveform, Frequency, Angular Velocity, time period.

Q6.Define form factor and Peak factor.

Q7.Find the equation of current  $i$  when voltage of  $V=V_m\sin\omega t$  is applied to a pure R-L circuit. Draw the wave form for current and voltage

Q8.What is transformation ratio? Write its formula.

Q9.Draw speed- torque characteristic of DC shunt motor and DC series motor.

Q10. Give the relationship between line values and phase value in star connected load with reference to three-phase supply

Q.11 what is auto transformer? Draw its diagram.

#### 4 Marks questions

Q12. Three impedance each of  $2\Omega$  resistance,  $2\Omega$  inductive reactance are connected in delta connection, 400v ac supply . Calculate:

- i) Linevoltage ii) Phase voltageiii) Line current iv) Power consumed.

Q13.Concept of current, voltage and power in series R-L circuit.

Q14. Draw delta connected three phase supply system. Mark line voltage, phase voltage, line current and phase current. Write power equation

Q15. Define and explain with diagram – RMS Value, Average value, Instantaneous value and Amplitude.

Q16. Draw construction diagram of DC motor .

Q17. A coil of resistance  $10\ \Omega$  and inductance  $0.2\text{H}$  is connected across  $100\text{V}$ ,  $50\text{Hz}$  supply. Calculate the following:

i) Reactance ( $X_L$ )

ii) Impedance ( $Z$ )

iii) Current

iv) Power factor

Q18. An alternative voltage is represented by following expression:

$V=25 \sin (200\pi t)$  calculate:

i) amplitude

ii) Frequency

iii) Time period

iv) Angular velocity

Q19 write emf equation of a single phase transformer and state the meaning of each term in it.

#### **4 Marks Questions:**

Q20. compare star connected load with delta connected load.

Q21. Give application of DC shunt motor and DC Series motor.

Q22. What is phase? explain relation between waveform of ac quantity & phasor diagram.

State different types of powers and their equations for 3 phase system draw power triangle

Q23. Explain electrical power system with diagram.

Q24. Explain relation between  $V_L$  &  $V_{ph}$  and  $I_L$  and  $I_{ph}$  for star and delta connected 3 phase system. Derive equations of power for both star and delta connection.

Q.25 Give the Concept of current, voltage and power in series R-C circuit

Question bank EEN ME4G (17404 )

1. Explain construction and principle of operation of single phase transformers      4M
2. Define transformation ratio and voltage ratio  
3M
3. Define efficiency and regulation of transformer  
3M
4. Compare auto transformer and single phase transformer  
4M
5. Explain briefly the construction of a three phase I.M.  
4M
6. State the types of three phase induction motor and give its applications  
3M
7. A 4-pole and 3-phase I.M. operates from a supply whose frequency is 50 Hz. Calculate
  - a) the speed at which magnetic field of the stator is rotating
  - b) Determine the percentage slip if rotor is rotating at 1200 r.p.m.4M
8. A two -pole and three phase induction motor operates from a supply whose frequency is 50 Hz. Calculate
  - a) Synchronous speed
  - b) Determine the percentage slip if rotor is rotating at 2800 rpm4M
9. Draw and explain speed -torque characteristics of 3-phase I.M  
4M
10. Explain the working of a single phase capacitor start induction motor  
4M

11.Explain shaded pole induction motor with sketch.

3M

12.Explain the working of universal motor and state its application.

4M

13.What is stepper motor and give two applications of it ?

3M

14.Explain construction and application of servomotor.

4M

15.Explain the construction of alternator with neat diagram

4M

16.What are the factors for selection of motor for different drives

4M

17.List the types of enclosures

3M

18.State any two applications of dielectric heating, resistance indirect

4M

19.Explain the principle of electroplating and its applications

4M

20.List various types of water pumps used in irrigation sectors

3M

21.Draw neat wiring diagram to control two sockets, two fans and two lamps

3M

22.Write the full form of MCCB and ELCB. Explain their working.

4M

23.Explain the necessity of earthing briefly.

4M

24.What is tariff? State any four types of it.

3M

25.State applications of any four safety tools used in electrical workshop

3M

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