# EEN Question Bank (17318) IE/IS/EJ-3G Unit Test – I

## Chapter – 1 (A.C.Fundamentals)

1) List out advantages of AC over DC . (3 Marks)

2) Define peak factor, form factor, RMS value and average value. (3 Marks)

3) Define wave form, instantaneous value, time period, frequency. (3Marks)

4) An alternating current given by equation i = 142.14 Sin 628 t. Find (3 Marks)
   i) RMS value ii) Average Value iii) Frequency

5) Draw the Phasor Diagram to represent the following voltages:
   $V_1$=50 sin wt , $V_2$=75 sin wt , $V_3$ = 200 sin (wt + $\pi$/3) , $V_4$ =100 sin (wt+ $\pi$/4). (3M)

6) Define power factor in 3 different ways .and give its significance. (3M)

7) For RC circuit i)Draw the circuit diagram ii)write the voltage & current equations .
   iii)Draw the vector diagram. iv)Draw the impedance triangle. (4M)

8) A coil of resistance 10 Ω and inductance 0.1 H is connected in series with a capacitor of 150 µF across 200 V, 50 Hz supply. Calculate
   Inductive reactance iii) Capacitive reactance
   Impedance iv) Current (4 M)

9) A coil having a resistance of 10 Ω and inductance of 0.2 H is connected to 100 V, 50 Hz supply. Calculate i)Impedance of the coil ii) Current taken iii)Reactance of the coil iv) Phase difference between current and applied voltage (4 M)

10) Draw a power triangle for inductive load. Define active power, reactive power and apparent power in A.C. Circuits (4 M)

11) A Series R-L-C circuit has R=25 Ω ,L=25mH and C=25 µF. Find Inductive and Capacitive reactances, Impedance ,Current ,Power factor of the circuit. Across 230V, 50 Hz supply. Also comment on the nature of circuit. Draw phasors. (4 M)

12) Draw the graph of resonance in RLC series circuit. Write conditions for series resonance. (4 M)

13) Compare series resonant circuit and parallel resonant circuit. (4 M)

**Chapter -2 ( Poly Phase system )**

14) State the relationship between line and phase quantities for star and delta connected load (3 M)

15) State any four advantages of poly phase system. (3M)

16) Write down the equations to find out the active power , reactive power in 3phase system. (3M)

17) State the meaning of three phase balanced and unbalanced load. (3M)

18) Three resistance of 25 Ω each are connected in delta across a 3 phase 400V A.C. supply find i)phase current ii)line current iii)phase voltage iv)total power consumed. (4M)

19) Calculate the line current, phase current, power factor and total power for a delta connected circuit having the resistance of 10 Ω and inductance of 5 Ω for 3 phase 440 V, 50 Hz A.C. (4 M)

20) Draw a 3phase star connected supply system and state the relation between V ph and $V_L$, Iph, and $I_L$. State an expression to determine power in the circuit. (4M)

21) A delta connected balanced load has an impedance of (3+j4) Ω connected to a 230v,50 Hz A.C. supply. Calculate values of line and phase currents, line and phase voltages power consumed by each impedance and total power consumed. (4M)

22) State the principal of three phase e.m.f generation. and sketch three phase voltage waveform. Write voltage equtations. (4M)