BESCBK204 SIMP Questions -22SCHEME

BY TIE REVIEW TEAM

Average time to be spent per module- 75 Mins

Module-2(Study any 6 Questions)

1. Mention the standard equation for the sinusoidal voltage and current and define the following: (i) waveform (ii) time period (iii) frequency (iv) amplitude (v)phase (vi)phase difference, (vii)average value (viii)RMS value (ix)form factor(x) peak factor.

2. Define RMS value of alternating current ,show that its value is proportional to maximum value

3. Explain the generation of single phase A.C induced EMF with suitable diagrams

4. Define Average value of alternating current and derive an expression for it in terms of maximum value

5. Derive the voltage and current relationship with Phasor diagrams in R,L, C, R-L, R-C and R-L-C circuits.

6. Define (I)Active vs reactive power vs apparent power (ii)Power factor (iii)3 Phase vs 1 phase ac system - Generation
7. Derive the form factor of an alternating quantity

8. Mention the relation between the line and phase quantities of a three phase star and delta connected system

Module-1(Study any 5 Questions)

1. Define (i)Ohm's law and Mention its limitations (ii) KVL and (iii) KCL
2. Prove the series network as voltage divider and parallel network as current divider
3. Difference between conventional and non-conventional energy resources 4. With necessary diagrams explain the single line diagram (SLD) of electrical

power systems.

5. With necessary diagrams explain the hydro and solar power generation/With block diagram explain Solar & wind power generation
6. Problems on Ohm's law, KCL/KVL

Module-3(Study any 5 questions)

1. Derive EMF/Torque equation of a DC Generator with usual notations - 12M
2. With a neat sketch explain the construction of the various parts of DC Generator
3. Explain the function of the following parts of the D.C machine. i) Yoke ii) Field winding iii) Commutator iv) Pole shoe v) Pole core vi) Brush
4. Explain the working principle of D.C motor with suitable diagrams
5. Discuss about various characteristics of a DC series motor with neat diagrams
6. Discuss the following characteristics for i) series motor ii) dc shunt motor with relevant plots. i) Tav/s Ia ii) N v/s Ia

Module-4 (Study any 6 questions)

1. Explain the construction, working principle of the transformer and compare the core and shell type transformer.
2. Define slip and slip speed. Derive an expression for frequency of rotor current with suitable considerations.
3. Explain the concept of rotating magnetic field and show that resultant EMF remains same at different instants of time.
4. Derive an EMF equation of the transformer with usual notations.
5. Derive the condition for which the efficiency of a transformer is maximum at any load, any p.f.
6. List different types of loss in transformers and explain each one in brief
7. Explain the constructional features of the 3 phase induction motor with suitable diagrams.

Module- 5

1. Explain (i)The working principle of Fuse and MCB (ii)Casing and Capping (iii)RCCB
2. What is earthing? Explain different types of earthing with neat sketches
3. Write a short note on precautions against an electric shock.
4. Draw and explain a single line diagram of a typical A.C. power supply scheme
5. With a neat sketch and truth table explain 2 way and 3 way control of the lamp.
6. List out the power rating of household appliances including air conditioners, PCs, laptops, printers, etc. Find the total power consumed
7. Define “unit” used for consumption of electrical energy and explain the two part tariff with its advantages and disadvantages