Question bank
EM II

Unit 1 and 2

Q1-Which are two types of Alternator ? explain in detail.

Q2-Write down the difference between salient pole rotor and cylindrical rotor Alternator

Q3- Explain the construction of 3 phase Alternator with a neat labeled diagram

Q4- define following :

A)Concentrated winding

B)distributed winding

C)full pitch winding

D)short pitch winding

E)coil span factor

F)Pole Pitch?

Q-5What are the advantages and disadvantages of short pitched winding?

Q-6 Why parallel operation of the alternator is needed?

Q-7Write down the conditions required for paralleling two alternators.

Q-8what is meant by synchronizing the alternators?

Q-9what are the conditions to be satisfied for proper synchronising of alternators?

Q-10what are the advantages of parallel operation of alternators?

Q-11Explain Hunting in Synchronous motor ,it's causes and effects on synchronous motor .

Q12- Explain effect of change in excitation with constant load in case of synchronous motor

Q-13Draw and explain 'v' and inverted 'v' curves with respect to synchronous motor .

Q- 14 Which Type Of Rotor Is Suitable For Low Speed Alternators? Salient Pole Type Or Cylindrical Type Rotor?

Q-15 What Are The Advantages Of Stationary Armature And Rotating Field System?

Q-16 What is armature reaction in Alternator ?

Q-17 Write down different voltage drops in the alternator when it is loaded.

Unit 3

1. Explain the construction of the Linear Induction Motor.
2. State and explain types of Linear Induction Motor.
3. Explain any one of the applications of Linear Induction Motor in detail with a diagram.
4. Explain the different forces involved in Linear Induction Motor with a diagram.
5. State and explain parameters to be considered while designing low-speed application of Linear Induction Motor.
6. Explain different effects involved in Linear Induction Motor with diagrams.
7. Explain cogging forces in the Linear Induction Motor and techniques to reduce them.
8. Explain the working Principle of Linear Induction Motor with diagrams .
9. Draw and explain the speed thrust characteristics of the Linear Induction Motor.
10. Write down different merits and demerits of Linear Induction Motor.
11. Write down the classification of the Linear Induction Motor in detail with a diagram.
12. Differentiate between DC and AC servo motor.
13. Draw and explain AC servo motor.
14. State and explain types of stepper Motor.
15. State and explain any one of the applications of any special purpose motor.

Unit 4

1. Explain in detail any one application PM BLDC motor.
2. Draw and explain the construction and working of 6/4 switched Reluctance Motor with a labeled diagram.
3. Draw and explain the construction and working of 12/8 switched Reluctance Motor with a labeled diagram.
4. State advantages and disadvantages of switched Reluctance Motor
5. Draw phase energizing diagram for phase 'a' of Switched Reluctance Motor.
6. Explain with the help of the aligned and unaligned position of the rotor with the stator phase.
7. Draw inductance profile of Switched Reluctance Motor.
8. Explain Speed Torque Characteristics of Switched Reluctance Motor in their three different operating modes.
9. Draw and explain torque-speed characteristics of Switched Reluctance Motor.
10. Draw and explain current and torque wave form of switched reluctance motor

Unit 5
1. Write down limiting factors for electrical machine design?
2. Write about electrical engineering material used in electrical machine design .
3. Write power output equation of single phase and three phase transformer and explain it's each parameter.
4. write and explain factors considered while designing the core of transformer
5. Write and explain factors considered while designing the windings of transformer.
6. Design only the winding parameter of the 500 KVA,50 Hz , 6600/400 V single phase core type ,oil immersed natural cooled power transformer .
7. state and explain different circuits involved in the design of the electrical machines
8. Calculate the KVA output of the single-phase transformer from the following data .
   Hw/D=2.8 d/D=0.56 Ai/Acc=0.7 δ=2.3 A/mm2 Kw=0.27 f=50 Hz Bm=1.2 wb/m2 D=0.4 m