



R20 Regulation

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

Subject code: 3P4BC

B.Tech IV Semester Regular Examinations, July 2022

ELECTRICAL MACHINES - II

(EEE)

Maximum Marks: 70

Date: 26.07.2022

Duration: 3 hours

- Note: 1. This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 How rotating magnetic field is produced in poly phase induction motor.
- 2 List out the difference between cage and wound rotor machines.
- 3 Define crawling and cogging.
- 4 How to conduct blocked rotor test and its need.
- 5 What is meant by pitch and winding factors?
- 6 List out the difference between distributed and concentrated windings.
- 7 How to determine sub transient reactance in synchronous machine.
- 8 How hunting is occurred and prevented in Synchronous machine.
- 9 What is the function of auxiliary winding in single phase induction motor?
- 10 What are the advantages of shaded pole induction motor?

Part-B

Answer All the following questions.

(10MX 5=50Marks)

- 11 Explain the construction, working and operation of three phase slip ring induction motor with a neat diagram. [10]
- OR
- 12 Explain the construction, working and operation of three phase squirrel cage induction motor with a neat diagram. [10]
- 13 With a neat diagram explain V/F and change in frequency method to control the speed of the induction motor. [10]
- OR
- 14 Derive the torque expression of induction motor for various conditions and explain the torque – slip characteristic in detail with neat diagram. [10]
- 15 Explain the construction and working of salient pole alternator in detail with a neat diagram. [10]
- OR
- 16 Explain how to calculate the regulation of synchronous machine using MMF & EMF method in detail with neat diagrams. [10]

17 Describe in detail about synchronizing alternators with infinite bus bars and synchronizing power torque with a neat diagram. [10]

OR

18 Explain the various methods of starting synchronous motor in detail with a neat diagram. [10]

19 Explain the double field revolving theory in detail with a neat diagram. [10]

OR

20 Describe the construction, working and operation of universal motor in detail with a neat diagram. [10]