



Regulation R18

Subject code: 2P3BD

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech III Semester Supplementary Examinations, July 2022

ELECTRICAL MACHINES-I

(Electrical and Electronics Engineering)

Maximum Marks: 70

Date:27.07.2022 Duration: 3 Hours

Part-A

All the following questions carry equal marks

(10x2M=20 Marks)

- 1 Write the energy balance equation?
- 2 What are the applications of galvanometer?
- 3 Define Critical field resistance & Critical speed in DC shunt generator.
- 4 Define the term 'Armature reaction' in DC machine.
- 5 What is back emf in DC motor?
- 6 Why starters are used for DC motors?
- 7 What is the function of a transformer?
- 8 Why transformer rating is expressed in terms of KVA?
- 9 Write down the applications of Auto- Transformer?
- 10 On which side tappings are provided in transformer?

Part-B

Answer all the questions

(10MX 5=50Marks)

- 11 Draw and explain the flux-linkages Vs current characteristics of linear magnetic Circuit. [10]

OR

- 12 Derive an expression for Lifting power of magnet. [10]
- 13 Derive an EMF equation of a DC generator. [10]

OR

- 14 Derive an expression for demagnetizing AT/pole and cross magnetizing AT/pole. [10]
- 15 Derive the torque equation of DC motor. [10]

OR

- 16 Explain 3-point starter with neat sketch. [10]

17 Explain the operation of single-phase transformer under No-load with vector diagram and equivalent circuit. [10]

OR

18 Explain the procedure for conducting open-circuit test on a single-phase transformer. [10]

19 What are the differences between 3-limbed core type and 5-limbed shell type core? [10]

OR

20 What are the advantages of auto-transformer when compared to two winding transformers? [10]