Code: 9A02303

R09

B.Tech II Year I Semester (R09) Supplementary Examinations June 2016
ELECTRICAL & MECHANICAL TECHNOLOGY
(Civil Engineering)

Time: 3 hours

Max. Marks: 70

Minimum of two questions from each part should be chosen for answering five questions.
All questions carry equal marks
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PART – A
(Electrical Technology)

1 (a) Derive the emf equation of DC generator.
   (b) What is the purpose of stator used in the DC motors? Explain the operation of 3-point stator with neat diagram.

2 (a) Explain the principle and operation of single phase transformer.
   (b) Explain the losses that occur in single phase transformers.

3 (a) Explain the principle of operation of alternator.
   (b) Explain the slip-torque characteristics of 3-phase induction motor.

4 Explain the principle and operation of repulsion type moving iron instruments with neat diagrams.

PART – B
(Mechanical Technology)

5 (a) What do you understand by gas welding? Explain the working principle of oxy-acetylene gas welding with neat sketch.
   (b) Explain the working principle of TIG and MIG welding with neat sketches.

6 Explain the working principle of 4-stroke single cylinder diesel engine with neat sketch.

7 What is the importance of multistage reciprocating air compressor? What are the advantages of multistage reciprocating air compressor?

8 (a) Explain the working principle of vapour compression refrigeration system with neat sketch.
   (b) What is a refrigerant? Write some desired characteristics of refrigerants.

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