

SUBJECT CODE:- 42
FACULTY OF ENGINEERING AND TECHNOLOGY
S.E. (Mech/Prod) Examination Nov/Dec 2015
Electrical Machine & Applied Electronics
(Revised)

[Time: Three Hours]

[Max. Marks: 80]

“Please check whether you have got the right question paper.”

- N.B
- i) Q.No.1 from section A and Q.No.6 from section B are compulsory.
 - ii) Solve any two questions from remaining in each section.

SECTION-A

- Q1. Solve any five. 10
- i) How cooling of DC motor is carried out?
 - ii) Give the classification of electric drive system.
 - iii) Define back EMF & state its significance.
 - iv) Enlist the braking methods of DC motor
 - v) What are the advantages of skewed slots in the rotor of a squirrel cage motor?
 - vi) Explain working principle of 3-phase induction motor.
- Q.2 a) Explain the application of electric drive for steel mill. 07
- b) Draw & explain 3-point starter for DC motor 08
- Q.3 a) Derive the expression for the cooling of the machines. 07
- b) Why DC motor is used for traction? Write its advantages and disadvantages. 08
- Q.4 a) What are the applications of shaded pole motor? Explain any one in detail. 07
- b) Explain the construction & working of stepper motor. 08
- Q.5 a) Explain variable voltage frequency control method for S- ϕ induction motor. 07
- b) Draw & explain the construction of squirrel cage induction motor. 08

SECTION-B

- Q.6 Solve any five:- 10
- i) Enlist four selection criteria for sensors.
 - ii) Draw & explain construction of LDR
 - iii) Differentiate between active and passive sensors.
 - iv) Define actuators.
 - v) Draw & explain structure of opto coupler.
 - vi) Draw & explain 7-segments display.
- Q.7 a) Draw and explain WDT in detail. 07
- b) Explain working of LCD displays. 08

- Q.8 a) Write a note on piezo sensors in detail. 07
- b) Explain solenoid valves with suitable diagram. 08
- Q.9 a) Draw enhancement MOSFET & explain its working in detail. 07
- b) Differentiate between DIAC & TRIAC. Draw its constructions of symbols. 08
- Q.10a) Write a note dimmer circuit. 07
- b) Explain protection circuits of power devices. 08