17696

16172

3 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions : *(1)* ***All*** *questions are* ***compulsory****.*
(2) Illustrate your answers with neat sketches ***wherever*** *necessary.*
(3) Figures to the ***right*** *indicate* ***full*** *marks.*
(4) Assume suitable data, if ***necessary****.*
(5) Mobile Phone, Pager and any other Electronic Communication devices are ***not*** *permissible in Examination Hall.*

Marks

1. Attempt **any five** of the following : **20**

a) Explain any four factors governing selection of electric drives.

b) Define the following terms :

i) Standard rating ii) Continuous rating

iii) Short time rating iv) Continuous maximum rating

c) Compare between direct drives and indirect drives (any 4 points).

d) Write four requirements of an adjustable speed drives.

e) Explain speed control of dc servo motor.

f) State any four reasons for production of noise in electrical drives.

g) State four disadvantages of group drives.

2. Attempt **any two** of the following : **16**

a) Explain with neat sketch dynamic and regenerative braking of dc series motor using thyristor.

b) What is load equalization ? Explain in detail the method of load equalization.

c) Explain speed control of three phase induction motors by using variable voltage variable frequency supply method.

3. Attempt **any two** of the following : **16**

a) i) Explain any four types of enclosure.

ii) Explain methods of noise reduction in electrical drives.

b) Draw block diagram of dc drives. Explain working and mode of control. State two application of it.

c) Draw speed-torque characteristics of three phase induction motor and explain its nature in details. State two applications of 3-phase I.M.

P.T.O.

Marks

4. Attempt **any two** of the following : **16**

a) State various types of mechanical power transmission systems used in electric drives. Explain any four types of mechanical power transmission systems.

b) State the comparison between AC drives and DC drives (any eight points).

c) Explain speed control of dc series motor using step up and step down chopper.

5. Attempt **any two** of the following : **16**

a) Explain control of three phase induction motor by slip power recovery scheme.

b) Draw and explain various block components of AC drives. Write working of it. State its applications.

c) Explain function of bearing and types of bearing used in electric drives.

6. Attempt **any two** of the following : **16**

a) Explain reversing operation and speed control of dc motor with diagram.

b) Draw and explain speed control of dc series motor using three phase full control converter.

c) Explain control of 3-phase I.M. by variable current variable frequency supply.