C09-EE-**603**

3764

BOARD DIPLOMA EXAMINATION, (C-09)

MARCH / APRIL - 2019

DEEE - VI SEMESTER EXAMINATION

A. C. MACHINES - II

Time : **3** Hours]　　　　　　　　　　　　　　　[Total Marks : **80**

PART - A　　　　　　　　　　　**3×10=30**

Instructions :　　(1)　Answer **ALL** questions.

　　　　　　　　　(2)　Each question carries **THREE** marks.

　　　　　　　　　(3)　Answer should be brief and straight to the point.

1　State applications of Synchronous motor.

2　State the phenomenon of HUNTING.

3　Draw the V curves of a Synchronous motor at full load and 1/2 full loads.

4　State the working principle of induction motor.

5　Define the following :

　(i)　Slip　(ii)　Synchronous watt

6　State any three applications of 3-Φ induction motor.

7　State the different types of single phase induction motors.

8　Why a single phase induction motor is not self starting ?

9　State any three applications of Capacitor Start Capacitor run induction motor.

10　State any three applications of Stepper Motor.

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PART - B   10×5=50

Instructions :   (1) Answer any **FIVE** questions.

(2) Each question carries **TEN** marks.

(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11   Explain the construction and working of synchronous motor.

12   State the starting methods of Synchronous motor. Explain any one of them in detail.

13   Draw the circle diagram of a 20 HP, 400V, 50Hz, 3-Φ star connectd induction motor from the following test data (line values)

No-load Test : 400 V, 9A, p.f. = 0.2

Blocked rotor test : 200V, 50A, p.f. = 0.4

From the circle diagram find :

(a) Line current, p.f., and efficiency at full load

(b) Full load slip

14   (a) Explain with the help of power flow diagram, how electrical input is converted into mechanical power output in an induction motor ?

(b) The rotor resistance and standstill reactance per phase at a 3-phase slip-ring induction motor are 0.02 Ω and 0.1 Ω respectively. What should be the value of the external resistance per phase to be inserted in the rotor circuit to give maximum torque at starting ?

15   Explain the working of DOL starter (Direct Online Starter) with the help of neat diagram.

16   Explain with neat sketch of the following speed control methods of 3-ϕ Induction Motor :

(i)   By changing the stator poles

(ii) By rotor emf injected method.

17   Explain the working of split–phase single phase induction motor with a neat diagram.

18   Explain the working principle of A.C. Series Motor with neat diagram.