M 19170

Reg. No. : .....

Name : .....

Combined I and II Semester B.Tech. (Reg./Sup./Imp.including Part Time) Degree Examination, April 2011

(2007 Admn.)

2K6EN 108 : BASIC ELECTRICAL ENGINEERING

Time: 3 Hours Max. Marks: 100

***Instruction** : Answer **all** questions.*

I. a) List the advantages and disadvantages of a nuclear power plant.

b) Draw and explain switchboard wiring for a domestic lighting circuit.

c) Define power factor and explain its significance.

d) Explain the construction and operation of any one type of stepper motor.

e) Draw the neat sketch of a vertical core type furnace (Ajay Wyalt furnace) and explain its principle.

f) What is the fundamental difference between electric arc welding and resistance welding ?

g) Explain the procedure to measure humidity.

h) Write the applications of Meggar. **(5×8=40)**

II. a) Explain with a neat diagram the concept of geothermal energy. What are its limitations ? **8**

b) Write explanatory note on Miniature Circuit Breaken (MCB) and Earth leaky circuit breakers. Explain their necessities and specifications. **7**

OR

c) Explain the advantages of hydro electric power generation . What are the obstacles is starting a new hydro power plant ? **8**

d) Explain the functions of Isolators, Lightning arrestors and Wave traps. **7**

P.T.O.

III. a) Explain :

i) Flat rate tariff

ii) Block rate tariff

iii) Power factor tariff

iv) Two part tariff. **8**

b) A 3 phase 50 Hz, 20 poles salient pole alternates with star connected stator winding has 180 slots on the stator. Each slot consist of 20 conductors. The flux per pole is 25 mWb and is sinusoidally distributed. The coils are full pitch. Distribution factor is 0.9597.

Calculate :

i) speed at which alternatives driven

ii) generated emf per phase. **7**

OR

c) What do you mean by back emf of a d.c. motor and explain its significance. **7**

d) Explain the constructional features of a poly phase induction motor indicate the types of rotors used in the induction motor. **8**

IV. a) Explain the concept of dielectric healing and mention its applications. **7**

b) Describe with a neat diagram ultrasonic welding. **8**

OR

c) With a neat diagram explain the operation of sodium vapour lamp. Mention the applications of sodium lamp and halogen lamp. **8**

d) Explain the charging methods used for charging lead acid baltines. What are the precautions to be taken ? **7**

V. a) Explain the construction and basic principle of operation of induction energy meter. **8**

b) Describe with a neat diagram the construction and principle of operation of moving Iron attraction type ammeter. **7**

OR

c) Explain with a neat diagram principle of piezo electric transducer used for measurement of pressure. **6**

d) What is tranducer ? Explain the classification of transducers depending on various parameters. **9**
