Code No. : 6497/N

FACULTY OF ENGINEERING
B.E. 4/4 (E & EE) II Sem. ((New) (Main) Examination, June 2010
UTILIZATION

Time: 3 Hours] [Max. Marks: 75

*Note : Answer **all** questions from Part – **A**. Answer **any five** questions from Part – **B**.*

PART – A **(25 Marks)**

1. Give the classification of various electric heating. **2**
2. Write the expression for Stefan's law of heat radiation. **3**
3. Draw schematic diagram for starting of synchronous motor. **3**
4. What is meant by limit switches ? **2**
5. Draw polar curve for horizontal plane. **2**
6. Define candle power and luminous intensity. **3**
7. Write short notes on Kando system. **3**
8. What are the factors affecting on schedule speed ? **2**
9. Why d.c. shunt motor not preferable for traction purpose ? Explain. **2**
10. What are the active materials used in lead acid cell ? **3**

PART – B **(50 Marks)**

11. Explain Ajax Wyatt type induction furnace in detail with neat schematic diagram. **10**
12. a) Explain operation of float switches with neat diagram. **5**
    b) Explain Jogging operation of induction motor with neat schematic diagram. **5**

13. a) A room of size 15 × 6 metres is to be illuminated by twenty 200 W lamps. The MSCP of each lamp is 250. Assume a depreciation factor 1.2 and utilization factor 0.6. Calculate the average illumination produced on the floor. **5**

    b) Explain sodium vapour lamp with neat diagram. **5**

14. Mention the various parts of lead-acid battery and explain function of each part in detail. **10**

15. The electric train weighing 400 tonnes runs along an up gradient of 1% with following speed-time curve: Uniform acceleration of 1.5 kmphps for 30 secs.
    Free-running for 36 secs.
    Coasting for 25 secs.
    Braking at 2.6 kmphps to rest.
    If tractive resistance is 45 N/ tonne, rotational inertia effect 10% overall efficiency of transmission and motor 75%. Determine the specific energy consumption. **10**

16. a) Explain in brief about dielectric heating. Mention its applications. **5**

    b) Explain float switches with neat schematic diagram. **5**

17. Write brief notes on the following :

    a) Stroboscopic effects.

    b) Coefficient of adhesion.

    c) Welding transformer. **(3+4+3)**
