Seat No: _____ Enrollment No: _____

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

B.Tech. Summer 2018 – 19 Examination

Semester: 5 **Date: 20 /05/2019**
Subject Code: 03106347 **Time: 10.30 am to 1.00 pm**
Subject Name: Applications of Electrical Energy **Total Marks: 60**

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions (All are compulsory) (Each of one mark) **(15)**

1. _____ is a unit of luminous intensity.
2. The unit of illuminance is _____.
3. The flicker effect of fluorescent lamp is more pronounced at _____ frequencies.
4. Melting temperature of a good heating element should be _____
5. The electrode of a direct arc furnace is made of _____.
6. Electric arc welding process produces temperature up-to _____°C.
7. Resistance welding cannot be used for di-electrics. State True or False.
8. The ratio of average load to maximum load during a given period is known as _____.
9. The curve showing the variation of load on power station with respect to time is known as _____.
10. The rate at which electrical energy is supplied to consumer is known as _____.
11. Colour of light depends on _____.
    (a) Frequency (c) Both a & b
    (b) Wavelength (d) Speed of light
12. Which of the following heating method is based on the transformer principle?
    (a) Resistance heating (c) Induction heating
    (b) Eddy-current heating (d) Di-electric heating
13. During resistance welding heat produced at the joint is proportional to _____.
    (a) I^2R (c) current
    (b) kVA (d) voltage
14. For arc welding current range is usually _____.
    (a) 10 to 15 A (c) 50 to 100 A
    (b) 30 to 40 A (d) 100 to 350A.
15. Sum of continuous ratings of all equipments connected to the supply system is known as _____.
    (a) Connected load (c) Maximum load
    (b) Average load (d) All above

Q.2 Answer the following questions. **(Attempt any three)** **(15)**

A) Write a note on Incandescent lamp.
B) Explain resistance welding.
C) Define following terms:
(i) Average load (ii) Maximum demand (iii) Base load (iv) Demand factor
(v) Diversity factor
D) (i) Difference between fluorescent lamp and mercury vapour lamp. **(03)**
(ii) List out advantages of coreless induction furnace. **(02)**

Q.3 A) Explain different types of load curves and state importance of daily load curve. **(07)**
B) Explain classification of lighting schemes used for illumination in detail. **(08)**

OR

B) Explain various advantages of electric heating. **(08)**

Q.4 A) State the properties of good heating element. **(07)**

OR

A) State advantages of coated electrode used for welding. **(07)**
B) (i) List out objectives of tariff **(04)**
(ii) Explain the formation of electric arc during welding **(04)**