Reg. No. :

Question Paper Code : 90208

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2022.

Second Semester

Computer Science and Engineering

BE 8255 — BASIC ELECTRICAL, ELECTRONICS AND MEASUREMENT ENGINEERING

(Common to : Artificial Intelligence and Data Science/Computer Science and Business Systems/Information Technology)

(Regulations 2017)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State Ohm's law.

2. State Superposition theorem.

3. What is a transformer and mention its types?

4. List the merits and demerits of Brushless DC motor.

5. Mention the advantages of mercury vapour lamp.

6. State the applications of Pb acid battery.

7. Write the purpose of rectifiers.

8. What is PN junction?

9. Define torque.

10. What is the purpose of CRO?

PART B — (5 × 13 = 65 marks)

11. (a) Three resistances of values 2Ω, 3Ω and 5Ω are connected in series across 20 V, D.C supply. Calculate

    (i) equivalent resistance of the circuit

    (ii) the total current of the circuit

    (iii) the voltage drop across each resistor and

    (iv) the power dissipated in each resistor.

Or

(b) Discuss on pure inductive circuits and capacitive circuits.

12. (a) Brief the working principle of an ideal transformer and give the all day efficiency calculation.

Or

(b) Tabulate the types of DC motors, their applications and characteristics.

13. (a) Write a note on Fluorescent lamp and its types.

Or

(b) Draw the electric circuit of domestic refrigerator and explain its working.

14. (a) Explain the voltage regulator using LM 723.

Or

(b) Report on V-I characteristics of zener diode.

15. (a) What is seabeck effect? Briefly explain the construction and working principle of Thermo couple.

Or

(b) classify transducers and give a detailed view on peizoelectric transducer.

PART C — (1 × 15 = 15 marks)

16. (a) Elaborate of the static and dynamic characteristics of measurement.

Or

(b) Categorize the types of batteries and give the characteristics of Li ion and Nical cadmium (Nicd) batteries with diagram.

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