Reg. No. : | | | | | | | | | | | | |

Question Paper Code : X 10143

B.E./B.Tech. DEGREE EXAMINATIONS, NOV/DEC 2020 AND APRIL/MAY 2021
Second Semester
Computer Science and Engineering

BE 8255 – BASIC ELECTRICAL, ELECTRONICS AND MEASUREMENT ENGINEERING
(Common to Information Technology/Artificial Intelligence and Data Science/ Computer Science and Business System)

(Regulations 2017)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A **(10×2=20 Marks)**

1. State superposition theorem.
2. State Kirchoff's voltage and current law.
3. List out the advantages of brushless DC motor.
4. State the principle of brushless DC motor.
5. Mention some of the uses of renewable energy sources.
6. Mention the disadvantages of Pb acid batteries.
7. Illustrate with a neat diagram the difference between p-n and n-p junction.
8. What is an integrator ?
9. Name any two instruments for electrical measurements.
10. What is meant by parallax error ?

PART – B **(5×13=65 Marks)**

11. a) Outline the series and parallel circuit analysis with inductive network.

(OR)

b) Explain Norton's theorem for electrical analysis.

12. a) Outline the emf and torque equation of DC rotating machines.

(OR)

b) What is a transformer ? Mention its types and interpret its emf equation.

13. a) Determine the energy tariff calculation for domestic loads.

(OR)

b) Analyse the charge and discharge characteristics of NiCd and Li ion batteries.

14. a) Describe briefly about Multivibrator using 555 Timer IC.

(OR)

b) Describe in short about voltage regulator using IC LM 317.

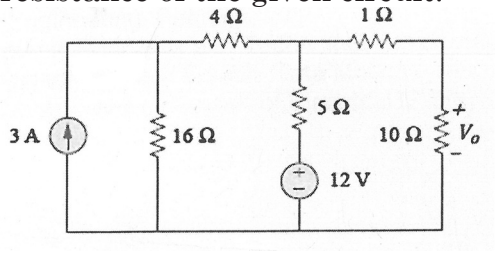
15. a) Illustrate briefly about moving coil and moving iron meters.

(OR)

b) Compare in detail on thermoelectric and piezoelectric transducers.

PART – C **(1×15=15 Marks)**

16. a) State Thevinin's theorem. Apply this theorem to determine the equivalent resistance of the given circuit.



(OR)

b) Explain in detail the maximum power transfer theorem. Determine the value of load resistance, R_L for which maximum power will transfer from source to load.