



C14-MNG-302

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**BOARD DIPLOMA EXAMINATION, (C-14)
OCTOBER/NOVEMBER-2018
DMNG-THIRD SEMESTER EXAMINATION**

BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

Time : 3 Hours]

[Total Marks: 80

PART-A

3X10=30

Instructions :

1. Answer **All** questions.
2. Each question carries **Three** marks.
3. Answer should be brief and straight to the point and shall not exceed five simple sentences.

1. State the working principle of d.c generator.
2. Classify the losses in a D.C machine.
3. Define (i) alternating quantity (ii) amplitude of alternating quantity.
- * 4. Write the expressions for impedance and power factor in series R-L-C circuit.
5. Define transformer.
6. State the voltage regulation of a 1- ϕ transformer.
7. Classify 1- ϕ induction motors.
8. List any three applications of 3- ϕ squirrel cage induction motors.
9. State the majority and minority carries in P and V type materials.
10. Draw the symbols of (i) P-N Diode (ii) Zener Diode and (iii) LED.

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PART-B

10X5=50

- Instructions* : *
1. Answer any **Five** questions.
2. Each question carries **ten** marks.
3. Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer

11. (a) Write the expression for generated e.m.f in D.C generator and specify each term involved in it.
(b) A 4-pole d.c generator has 640 armature conductors and flux per pole of 15m wb. Calculate the generated e.m.f when it is running at 1500 r.p.m if the armature is lap connected.
12. (a) State the need of starter in D.C motors.
(b) Explain the operation of a 3-point starter for a DC shunt motor with neat diagram.
13. A coil of resistance 20Ω and inductance 0.5 H are connected in series across a 320V, 50Hz a.c supply. Calculate (a) Inductive reactance (b) impedance (c) Current (d) Power factor and (e) power consumed in the circuit.
14. Describe the constructional Details of a 1- ϕ transformer.
15. Explain the working principle of an alternator.
16. Explain the working principle of dynamometer type wattmeter with a neat diagram.
- * 17. (a) Describe the working of PN junction diode with various biasing voltage.
(b) List the applications of a PN junction diode.
18. (a) Draw the symbols of (i) PNP and (ii) NPN transistors.
(b) Explain the working of an NPN transistor.

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