Reg. No. :											
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**Question Paper Code: 50653** 

## B.E./B.Tech. DEGREE EXAMINATION, NOV/DEC 2017

Second Semester

Mechanical Engineering

## GE6252 — BASIC ELECTRICAL AND ELECTRONICS ENGINEERING

(Common to Aeronautical Engineering, Automobile Engineering, Civil Engineering, Marine Engineering, Production Engineering, Biotechnology, Chemical Engineering, Petroleum Engineering, Plastic Technology, Polymer Technology, Textile Technology and Textile Technology (Fashion Technology))

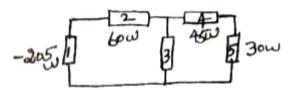
(Regulation 2013)

Time: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A —  $(10 \times 2 = 20 \text{ Marks})$ 

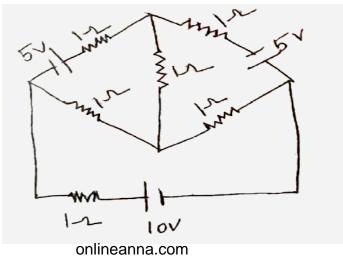
- 1. State the advantages of sinusoidal alternating quantity.
- 2. Find the value of  $P_3$  in the below circuit.



- 3. Draw the open circuit characteristics curve (OCC) of DC generator.
- 4. Write the output voltage equation of single phase transformer.
- 5. Give difference between the half wave and full wave rectifiers.
- 6. List out the use of h-Parameters.
- 7. Prove the cumulative and associate Boolean algebra.
- 8. Draw the full adder circuit
- 9. List the types of signals.
- 10. Mention the few advantages of satellite communication.

## **PART B** — $(5 \times 16 = 80 \text{ Marks})$

11. (a) Determine the branch currents in the network when the value of each branch resistance is  $1\Omega$ . (16)



(	b) Explain the operating principle of moving coll and moving from instruments.	(10)
12.	(a) Explain the construction and principle of operation of a DC generator at diagrams.  Or	with (16)
13.	<ul><li>(b) Describe the different starting methods for single phase induction motor.</li><li>(a) Explain with neat diagram, how current flows in a PN junction diode and a the limitations in the operating conditions a PN junction with V-I characteristic</li></ul>	
	Or	
	(b) Discuss the static characteristics (input and output) of Common Emconfiguration of BJT.	itter (CE) (16)
14.	(a) Design and explain the working of a synchronous mod-6 counter.  Or	(16)
	(b) Explain the analog to digital converter using the successive approximation with neat diagram.	technique (16)
15.	. (a) Explain the need for modulation and also compare AM with FM.  Or	(16)
	(b) (i) Discuss the merits and demerits of FAX machines.	(8)
	(ii) explain the working principle of microwave communication.	(8)