

Code No: 53015

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech II Year I Semester Examinations, November - 2015

ELECTRICAL AND ELECTRONICS ENGINEERING

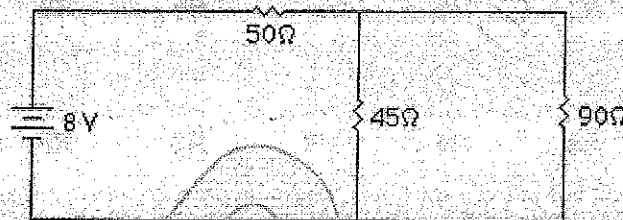
(Common to CE, ME, AME, PTE)

Time: 3 hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

- 1.a) State and explain the Kirchhoff's laws applied to electrical circuits.
b) i) What is the total resistance of the circuit.
ii) Find out the current through 45 ohm resistor. [7+8]



- 2.a) With a neat sketch explain the constructional details of a DC machine.
b) A 100 V series motor takes 45A when running at 750 rpm. Its armature resistance is 0.22 ohm, while the series field resistance is 0.13 ohm find out the back emf developed in DC series motor. [7+8]
- 3.a) Derive the emf equation of a single phase transformer.
b) A single phase transformer has 350 primary and 1050 secondary turns. The net cross sectional area of the core is 55 cm². If the primary winding be connected to a 400 V, 50 Hz single phase supply, calculate the maximum value of flux density. [7+8]
- 4.a) Explain how regulation is determined by synchronous impedance method?
b) Explain the principle of operation of induction motor. [8+7]
- 5.a) Classify the different types of measuring instruments and give one example of each.
b) What are the essential devices required for the satisfactory operation of an indicating instrument. [7+8]
- 6.a) Explain the operation of full wave bridge rectifier.
b) Explain the V-I characteristics of a PN diode. [8+7]
- 7.a) Explain the operation of a PNP transistor.
b) Explain the characteristics of SCR. [8+7]
- 8.a) Explain the operation of CRO with the help of block diagram.
b) Explain the applications of CRO in detail. [8+7]

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