

Code No: 9AC48

Date: 30-Aug-2023 (FN)

B.Tech I-Year II- Semester External Examination, Aug/Sept-2023 (Regular)

BASIC ELECTRICAL AND ELECTRONICS ENGINEERING (CSE, IT, DS, CS, AIML and IOT)

Time: 3 Hours

Max.Marks:60

Note: a) No additional answer sheets will be provided.
b) All sub-parts of a question must be answered at one place only, otherwise it will not be valued.
c) Missing data can be assumed suitably.

Bloom's Cognitive Levels of Learning (BCLL)

Remember	L1	Apply	L3	Evaluate	L5
Understand	L2	Analyze	L4	Create	L6

Part - A

Max.Marks: 6x2=12

ANSWER ALL QUESTIONS, EACH QUESTION CARRIES 2 MARKS.

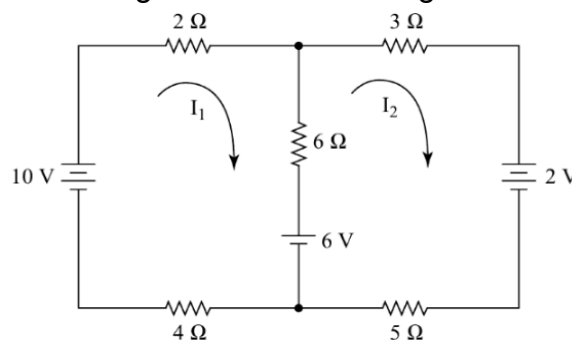
- | | BCLL | CO(s) | Marks |
|--|------|-------|-------|
| 1 What is the purpose of commutator in DC Machine? | L1 | CO1 | [2M] |
| 2 Write the relation between phase voltage and line voltage, phase current and line current in the case of star connection and delta connection. | L1 | CO2 | [2M] |
| 3 What are the different types of measuring instruments? | L1 | CO3 | [2M] |
| 4 Draw the characteristics of PN junction diode. | L2 | CO4 | [2M] |
| 5 Distinguish between FET and BJT. | L2 | CO5 | [2M] |
| 6 Write the truth table for NAND gate for two inputs and draw its symbol. | L2 | CO6 | [2M] |

Part – B

Max.Marks: 6x8=48

ANSWER ALL QUESTIONS. EACH QUESTION CARRIES 8 MARKS.

- | | BCLL | CO(s) | Marks |
|--|------|-------|-------|
| 7. a) Calculate the current flowing in 6Ω resistor using mesh analysis. | L3 | CO1 | [8M] |



OR

- | | | | |
|--|----|-----|------|
| b) Explain the operation of DC generator with neat sketch | L2 | CO1 | [8M] |
| 8. a) A voltage $v(t) = 100\sin 314t$ is applied to a series circuit consisting of 10 ohms resistance, 0.0318 Henry inductance and a capacitor of $63.6\mu\text{F}$. Determine Impedance, power factor and active power consumed. | L3 | CO2 | [8M] |
| OR | | | |
| b) Write the equations of star to delta conversion and delta to star conversion with neat diagrams. | L4 | CO2 | [8M] |

9. a) Explain the principle and construction of a PMMC instrument with the help of a neat sketch. L2 CO3 [8M]
- OR
- b) Explain the operation of 3-phase induction motor with neat sketch. L2 CO3 [8M]
10. a) Explain clipper and clamping circuits L4 CO4 [8M]
- OR
- b) Draw the V-I characteristics of Zener diode and what are the differences between an ordinary semiconductor diode and zener diode. L2 CO4 [8M]
11. a) Compare CB, CE and CC configurations L4 CO5 [8M]
- OR
- b) Explain the construction and working of a n-channel JFET L2 CO5 [8M]
12. a) $1010111011_{(2)}$ convert into L4 CO6 [8M]
- i) Decimal ii) Octal
- iii) Hexadecimal iv) $7864_{(10)}$ convert into binary.
- OR
- b) Obtain (i) Sum of products form and (ii) Product of sums form for L4 CO6 [8M]
 $f = \overline{X}\overline{Z} + \overline{Y}\overline{Z} + Y\overline{Z} + XY$

-- 00 -- 00 --