BACHELOR OF TECHNOLOGY (C.B.C.S.) (2021-COURSE)

**B. Tech. Sem - II COMPUTER :SUMMER- 2022**

**SUBJECT : ELECTRICAL TECHNOLOGY**

Day : Wednesday | Time : 10:00 AM-01:00 PM

Date : 3/8/2022 | **S-24014-2022** | Max. Marks : 60

**N.B.**

1) All questions are **COMPULSORY**.
2) Figures to the **RIGHT** indicate **FULL** marks.
3) Use of non-programmable calculator is **allowed**.
4) Assume suitable data **WHEREVER** necessary.
5) Draw neat diagram **WHEREVER** necessary.

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**Q.1** Define and explicate the following quantities along with their units **(10)**

i) Magnetic flux
ii) Flux linkages
iii) Magnetic field
iv) Magnetic field strength
v) Magnetic field intensity.

**OR**

**Q.1** Elucidate B. H. curve with neat sketch. Explain various points on the curve. What is magnetic fringing **(10)**

**Q.2** Explicate the concept of phase, phasor and phasor diagram with neat sketches. Also draw related waveforms **(10)**

**OR**

**Q.2** Clarify the terms resonance, bandwidth and quality factor. Explain these term for series and parallel circuits **(10)**

**Q.3** Describe $1\phi$ autotransformer with neat sketch. Also compare $1\phi$ autotransformer and normal transformer. **(10)**

**OR**

**Q.3** Clarify emf equation of $1\ \phi$ transformer. also solve following. In a single phase transformer primary number of turns are 500, secondary number of turns are 250. Primary voltage is 220. Find secondary voltage **(10)**

**Q.4** Enlighten star and delta connection of a $3\ \phi$ system. Write down equations for line voltage and phase voltage. Also write equations for phase current and line current and power equations for $3\ \phi$ star and delta load. **(10)**

**OR**

**Q.4** What are advantages of $3\ \phi$ systems? What are the advantages of grid system over a standalone system **(10)**

**Q.5** Elucidate construction of squirrel cage and slip ring $3\ \phi$ induction motor with neat sketches. Also compare them. **(10)**

**OR**

**Q5** Clarify the construction of a DC motor with neat sketches **(10)**

**Q.6** Describe various types of primary and secondary cell. Also compare primary and secondary cell. **(10)**

**OR**

**Q.6** Clarify the terms solar cell, solar panel and solar array. What are the advantages and applications of solar energy? **(10)**

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