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PRESIDENCY UNIVERSITY BENGALURU

SCHOOL OF ENGINEERING

MAKE UP EXAMINATION - JULY 2024

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| **Semester : I** | **Date : 10-07-2024** |
| **Course Code :EEE1001** | **Time : 09.30am to 12.30pm** |
| **Course Name : Fundamentals of Electrical and Electronics Engineering** | **Max Marks :100** |
| **Program :B Tech** | **Weightage :50%** |

**Instructions:**

1. *Read all questions carefully and answer accordingly.*
2. *Question paper consists of 3 parts.*
3. *Scientific and non-programmable calculator are permitted.*
4. *Do not write any information on the question paper other than Roll Number.*

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| **PART A** | | | |
| **ANSWER ANY 4 QUESTIONS 4Q X 5M=20M** | | | |
| 1 | Compare Series and parallel electrical Circuits with suitable diagrams. | (CO 1) | [Knowledge] |
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| 2 | 1. List the rotating parts in a D C Generator and mention its functions. | (CO 2) | [Knowledge] |
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| 3 | List the difference between lap and wave winding in a DC machine. | (CO 2) | [Knowledge] |
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| 4 | Mention three different essential torques required for functioning of any deflecting type of Instruments. | (CO 3) | [Knowledge] |
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| 5 | Name the materials that are classified based on energy gap. | (CO3) | [Knowledge] |
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| 6 | What is the phase angle between voltage and current in a purely Inductive and purely Resistive circuit. Draw the phasor diagram. | (CO 4) | [Knowledge] |
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| **PART B** | | | |
| **ANSWER ANY 5 QUESTIONS 5Q X 10M=50M** | | | |
| 7 | Briefly explain the operation of a transformer. Define Transformation and Turns ratio. | (CO 2) | [Comprehension] |
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| 8 | Define the term synchronous speed of 3 phase Induction Motor as well as Back emf in D C Motor. Write the corresponding equations. | (CO 2) | [Comprehension] |
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| 9 | 1. List basic Components of domestic wiring and explain in brief. | (CO 3) | [Comprehension] |
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| 10 | Draw the Block diagram of Digital Measuring Instrument and mention the functions of any 2 blocks | (CO 3) | [Comprehension] |
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| 11 | Compare Extrinsic and intrinsic Semiconductors | (CO 4) | [Comprehension] |
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| 12 | Using Colour Code how to find the value of a given Resistor. | (CO 4) | [Comprehension] |
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| 13 | By referring to the figure that is given in Q No 13 ,summarize your observations | (CO 4) | [Comprehension] |
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| **PART C** | | | |
| **ANSWER ANY 2 QUESTIONS 2Q X 15M=30M** | | | |
| 14 | 1. Three resistors of 4 Ω, 2 Ω and 8 Ω are connected in parallel to a 16 V supply. Calculate the supply current and the total effective resistance of the network. What other parameters can be obtained from this data. 2. Determine any 2 unknown values from the circuit that is given in Q No 14. | (CO 1) | [Application] |
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| *15* | 1. A coil connected to a 250 V, 50 Hz sinusoidal supply takes a current of 10 A at a phase angle of 30°. Calculate the impedance of coil and also power taken by the coil. 2. Calculate any 2 unknowns of the inductive circuit with parameter values 5 Ω and 0.02 H when supplied with 100 V, 50 Hz. | *(CO 2)* | [Application] |
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| 16 | A single phase 50 Hz transformer has 30 primary turns and 300 secondary turns. The primary winding is connected to a 200 V supply. Identify the unknown parameters and compute them if the secondary current is 100 A. | (CO 3) | [Application] |
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