



P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Seventh Semester, B.E. - Electrical and Electronics Engineering

Semester End Examination; Dec - 2017/Jan - 2018

Testing and Commissioning of Electrical Equipments

Time: 3 hrs

Max. Marks: 100

Note: Answer FIVE full questions, selecting ONE full question from each unit.

UNIT - I

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|------|---|----|
| 1 a. | Explain the points to be considered in the selection of site and location of power transformer. | 10 |
| | b. State and explain various methods of cooling of transformer. | 5 |
| | c. State the characteristics of transformer oil. | 5 |
| 2 a. | Why drying of transformer is needed? Explain different methods of drying the same. | 10 |
| | b. Describe the test set up for Impulse testing of power transformer. | 10 |

UNIT - II

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|------|---|----|
| 3 a. | Mention the specification of synchronous Generator. | 6 |
| | b. Explain the significance of balancing of rotor. How the balancing is achieved? | 7 |
| | c. Explain the function and principle of brushless excitation system. | 7 |
| 4 a. | Explain the sudden 3- ϕ short circuit test on a 3- ϕ generator and how to calculate X'_d , X''_d and X_d or X_q from the sudden 3- ϕ short circuit test. | 10 |
| | b. Explain the procedure of low slip test and method of calculation of X_q from the same. | 10 |

UNIT - III

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| 5 a. | Explain the requirement of civil engineering works and foundation work for medium and large Induction motor. | 10 |
| | b. Explain in detail what are the different methods of drying out the Induction motor? | 10 |
| 6 a. | State the causes of vibration in motor and generators. Explain the harmful effects of vibration. How the vibrations are measured? | 10 |
| | b. State the various types of enclosures for rotating electrical machines and the type of cooling adopted in them. | 10 |

UNIT - IV

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| 7 a. | Explain the various steps in maintenance of circuit breaker. | 10 |
| | b. List the specification of high voltage circuit breaker. | 5 |
| | c. Explain the short circuit testing station for circuit breakers. | 5 |
| 8 a. | What are the different types of Test conducted on circuit breakers? Explain. | 10 |
| | b. Mention the possible trouble, causes and corrective actions for outdoor circuit breakers. | 10 |

UNIT - V

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| 9 a. | Mention the objectives and seven principles of safety management. | 10 |
| b. | Explain the safety management interface with O and M. | 10 |
| 10 a. | Mention the recommended safety precautions against electrical shock in small buildings, shop and LV installations. | 10 |
| b. | State and explain the principles of live line working. | 10 |

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