

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular End Semester Examination – Summer 2022

Course: B. Tech. Branch : Electrical Engineering

Semester :VI

Subject Code & Name: BTEEC605A & SWITCH GEAR AND PROTECTION

Max Marks: 60

Date:29/08/2022

Duration: 3.45 Hr.

Instructions to the Students:

1. All the questions are compulsory.
2. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in () in front of the question.
3. Use of non-programmable scientific calculators is allowed.
4. Assume suitable data wherever necessary and mention it clearly.

(Level/C O) Marks

Q. 1 Solve Any Two of the following.

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|----|---|------------|----------|
| A) | Explain Principle of working and characteristics of attracted armature type relay | CO1 | 6 |
| B) | What are Different types of Distance Relays explain impedance relay in detail. | CO2 | 6 |
| C) | Explain Microprocessor based overcurrent relay with diagram and flow chart. | CO2 | 6 |

Q.2 Solve Any Two of the following.

- | | | | |
|----|--|------------|----------|
| A) | Explain construction and working principle of Minimum oil Circuit Breaker | CO1 | 6 |
| B) | For 132KV system, the reactance and capacitance up to the location of C.B is 3 ohm and 0.015 microfarad respectively calculates following: a) Frequency of Transient Oscillation. b)The maxi Value of restriking Voltage Across the contacts of C.B c)The maxi value of RRRV | CO3 | 6 |
| C) | What are characteristics of SF6 gas and explain Puffer type SF6 Circuit breaker | CO2 | 6 |

Q. 3 Solve Any Two of the following.

- | | | | |
|----|---|------------|----------|
| A) | Explain Numerical protection working principle,types and advantages and disadvantages of numerical relay. | CO1 | 6 |
| B) | What are different method of Earthing explain its advantages explain one in detail. | CO2 | 6 |
| C) | Explain construction working surge absorber its application. | CO2 | 6 |

Q.4 Solve Any Two of the following.

- | | | | |
|----|--|------------|----------|
| A) | Explain the circulating current protection of Busbar also explain linear couplers. | CO1 | 6 |
|----|--|------------|----------|

- B) Explain high impedance differential protection of Busbar. **CO2 6**
- C) Explain the parallel feeder protection and ring main protection. **CO2 6**

Q. 5 Solve Any Two of the following.

- A) Explain Alternators Stator fault protection system. **CO1 6**
- B) Explain Unbalanced load protection for alternator.(Negative phase sequence [NPS] protection **CO2 6**
- C) Explain Buchholz relay with neat diagram explain its advantages & Disadvantages, application. **CO2 6**

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