

T.E. sem-V (CBSEs) Electrical- Protection and Switchgear  
 Engg  
 Q.P. Code : 584200  
 3/12/16  
 [ Total Marks : 80 extra ]

(3 Hours)

[ Total Marks : 80 extra ]

- N.B.: 1) Question No.1 is compulsory.  
 2) Attempt any three questions remaining five questions.  
 3) Draw neat diagrams wherever it is necessary.

- |   |    |
|---|----|
| 1. Answer the following :   | 20 |
| a) What are the difficulties associated with differential protection?   |    |
| b) Where and why isolators, contractors and circuit breakers are used in power system?  |    |
| c) Why instrument transformers are required in power system?  |    |
| d) List all the desirable qualities of protection scheme and explain any two qualities in detail.   |    |
| 2. a) Explain working of different types of fuse with their applications.   | 10 |
| b) Explain working principle of Vacuum circuit breaker and constructional details.  | 10 |
| 3. a) What is working principle of distance relays. Differentiate between different types of distance relays.                                 | 10 |
| b) Name the different types of fault that occur in transformer. Explain differential protection for star delta transformer.                   | 10 |
| 4. a) Classify overcurrent relays depending on their time current characteristics. Why IDMT relay is widely used for Over current protection. | 10 |
| b) With a neat diagram, explain working principle of induction disc relay with its application.   | 10 |
| 5. a) Explain causes, remedies and effect of unbalance, phase reversal and single phasing in Induction motor.                                 | 10 |
| b) Explain the block diagram of static relay and discuss in detail about comparators.   | 10 |
| 6. a) Discuss various properties of SF6 gas that make it suitable for arc quenching and explain SF6 CB in detail with suitable diagram.       | 10 |
| b) What are the protection provided for rotor of an alternator.   | 10 |

\*\*\*\*\*

278