1313 **Code : 15EE53T**

Register Number | | | | | | | | | | |

V Semester Diploma Examination, Nov./Dec. 2018

SWITCH GEAR & PROTECTION

Time : 3 Hours] **[Max. Marks : 100**

Note : (i) Answer any **six** questions from Part – **A**. Answer to each question carries **five** marks.

(ii) Answer any **seven** questions from Part – **B**. Answer to each question carries **ten** marks.

PART – A

1. List the types of lightning arresters. **5**

2. Explain the sources of fault power. **5**

3. State merits and demerits of HRC fuse. **5**

4. Explain the terms : **5**
   (i) Current rating of fuse element
   (ii) Fusing current
   (iii) Arc voltage
   (iv) Recovery voltage
   (v) Arcing time

5. List the fundamental requirements of protective relaying. **5**

6. Compare static relays with that of Electromagnetic relays. **5**

7. Explain with a neat sketch, the construction and working of Buchholz relay. **5**

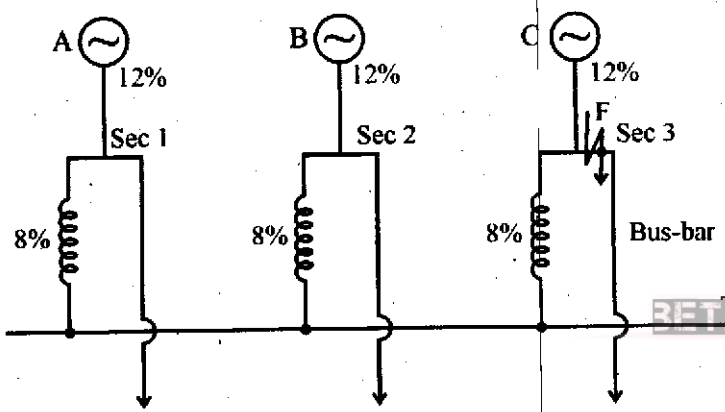
8. List different types of faults in transmission line. **5**

9. List the different tests conducted on circuit breakers. **5**

[Turn over

PART – B

10. A generating station has three section bus-bars connected with a tie-bar through 8% reactors rated 5000 kVA. Each generator is 5000 kVA with 12% reactance and is connected to one section of bus-bar. Find total steady input to a dead short-circuit between the lines on one of the section of bus-bar (i) with reactor (ii) without reactors **10**



11. (i) List different switch gear equipments. **5**
    (ii) Explain the construction and working of HRC fuse. **5**

12. (i) Explain construction and working of vacuum circuit breaker. **5**
    (ii) List the maintenance schedule of plain oil circuit breaker. **5**

13. (i) Explain the construction and working of SF_6 circuit breaker. **6**
    (ii) List the advantages and disadvantages of SF_6 circuit breaker. **4**

14. (i) Explain Primary and Backup protection. **5**
    (ii) List different types of faults in transformer. **5**

15. (i) Explain the construction and working of induction type non-directional over current relay. **5**
    (ii) List different basic types of protective relays. **5**

16. (i) With block diagram explain working of microprocessor based over current relay. **5**
    (ii) List the advantages of Numerical relays. **5**

17. (i) With a neat sketch explain the construction and working of differential protection scheme for alternators. **5**
    (ii) Explain with diagram the working of circulating current scheme for transformer protection. **5**

18. (i) Explain with neat sketch the substation parallel feeder protection. **5**
    (ii) Explain differential protection scheme used for bus bar protection. **5**

19. (i) List the types of neutral earthing and its importance. **5**
    (ii) Explain Peterson coil earthing. **5**