1484

Code : 15EE53T

Register Number | | | | | | | |

V Semester Diploma Examination, April/May-2018

SWITCHGEAR AND PROTECTION

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

Note : (i) Answer any **six** questions from Part – **A**. (Each question carries **5** marks)

(ii) Answer any **seven** questions from Part – **B**. (Each question carries **10** marks)

PART – A

1. Explain the importance of calculation of short circuit current. **5**

2. List the harmful effects of short circuit current. **5**

3. State the merits of SF_6 circuit breaker. **5**

4. Explain the essential features of switchgear. **5**

5. Compare static relay with electromagnetic relay. **5**

6. List the requirements of Protective Relays. **5**

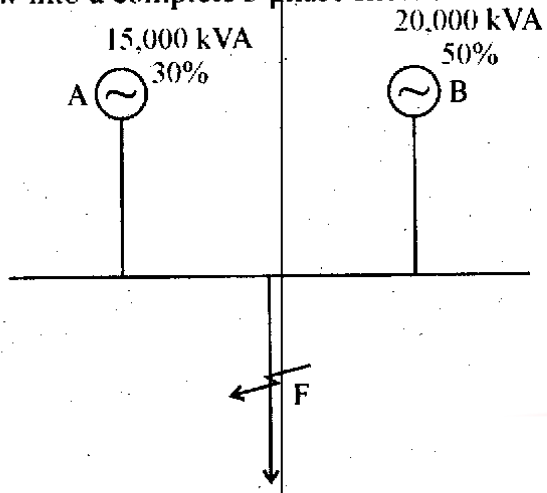
7. List different types of faults in Alternators. **5**

8. Explain the basic concept of distance protection. **5**

9. Explain indoor and outdoor type substation. **5**

PART – B

10. The figure below shows single line diagram of a 3 phase system. The percentage reactance of each alternator is based on its own capacity. Find the short circuit current that will flow into a complete 3 phase short circuit at F 10



11. (a) List the desirable characteristics of fuse element. 5
    (b) Differentiate between indoor type and outdoor type switchgears. 5

12. (a) Define the following : 6
    (i) Fusing factor
    (ii) Arc voltage
    (iii) Recovery voltage
    (b) Explain the construction and working of HRC fuse. 4

13. Explain with a neat sketch the construction and working of non-puffer type SF_6 circuit breaker. 10

14. Explain with a neat sketch the construction and working of Induction type non-directional over current relay. 10

15. Explain the construction and working of static over current relay. 10

16. (a) List any two applications of microprocessor based relay. 2
    (b) Explain combined leakage and overload protection of transformer. 8

17. Explain with a neat sketch construction and working of Buchholz Relay. 10

18. (a) Explain differential protection of Bus bars. 5
    (b) Explain time graded protection of Radial feeders. 5

19. (a) Explain the importance of Neutral Earthing. 5
    (b) Explain Type test and Routine test. 5