Reg. No. | | | | | | | | | | | | |

Question Paper Code : 51516

B.E./ B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

Seventh Semester

Electrical and Electronics Engineering

EE 2402/EE 72/10133 EE 702 –PROTECTION AND SWITCHGEAR

(Regulations 2008/2010)

(Common to PTEE 2402/10133 EE 702 Protection and Switchgear for B.E (Part-Time) Sixth Semester Electrical and Electronics Engineering– Regulations 2009/2010)

Time : Three Hours **Maximum : 100 Marks**

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. What is the difference between a short circuit and an overload ?

2. Why earth wire is provided in overhead transmission lines ?

3. Write the effects of arc resistance.

4. List out the applications of static relays.

5. Can current transformers secondary winding be open circuited ? Justify your answer.

6. What are the various faults that would affect an alternator ?

7. What is meant by auto-reclosing ?

8. Write the function of isolating switch.

9. Give the difference between isolator and circuit breaker.

10. State the advantages of SF_6 circuit breaker.

PART – B (5 × 16 = 80 Marks)

11. (a) Explain different types of earthing the neutral point of the power system. Derive an expression for the reactance of the Peterson coil in terms of capacitance of the protected line.

OR

(b) (i) Explain the overlapping of protective zones with neat sketch. **(9)**

(ii) Classify the different faults in power system. Which of these are more frequents ? **(7)**

12. (a) Describe the operating principle, constructional features and area of applications of directional relay. How do you implement directional feature in the over current relay ? **(16)**

OR

(b) Explain MHO relay characteristic on the R-X diagram. Discuss the range setting of various distance relays placed on a particular location. **(16)**

13. (a) (i) Describe the differential protective scheme of transformer. **(8)**

(ii) Enumerate the protective scheme employed for the bus bar. **(8)**

OR

(b) With neat sketches, explain the different types of protective schemes for transmission lines. **(16)**

14. (a) (i) Derive the expression for restriking voltage. **(8)**

(ii) Explain about current zero interruption theories. **(8)**

OR

(b) Explain :

(i) Interruption of capacitive current **(8)**

(ii) Current chopping **(8)**

15. (a) Explain the construction, principle of operation of a minimum oil circuit breaker. What are its main advantages and disadvantages ? **(16)**

OR

(b) Briefly describe the testing of circuit breakers. **(16)**
