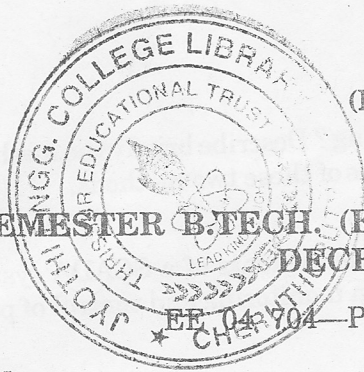


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(Pages : 2)

Name.....

Reg. No.....

SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION
DECEMBER 2011

EE 04704—POWER SYSTEMS—III

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

- I. (a) Explain how arc is initiated and sustained in a C.B. when its contacts separate.
(b) Discuss the problems associated with the interruption of capacitive current.
(c) Derive an expression for the torque developed by an induction type over current relay.
(d) What are the advantages of distance protection over other types of protection of feeders ?
(e) What are the merits of electric braking ?
(f) Discuss the advantages of electrically produced heat.
(g) Explain the various functions performed by a SCADA system.
(h) What are the problems which arise due to harmonics ?

(8 × 5 = 40 marks)

- II. (a) With a neat diagram, discuss the constructional details and operational features of a typical minimum oil circuit breaker. Also state its advantages and disadvantages over others.

(15 marks)

Or

- (b) (i) What are the different methods employed for protection of overhead transmission lines against lightning ? Explain them briefly.

(8 marks)

- (ii) What is the basic principle of operation of surge diverter ? Explain hom-gap diverter.

(7 marks)

- III. (a) Explain the construction, working principle and characteristics of reactance relay type distance relay.

(15 marks)

Or

- (b) Describe the Merz price circulating current system for the protection of transformer. Also indicate how C.I.'s should be connected on primary and secondary side of 3 phase transformer for different connections of primary and secondary windings.

(15 marks)

- IV. (a) Describe with neat diagrams the construction, principle of operation and application of metadyne convertor.

(15 marks)

Or

Turn over

- (b) What are the different methods of electric heating? Describe briefly the methods of direct and indirect resistance heating. List the applications of these two methods.

(15 marks)

- V. (a) Draw a block diagram to show the hardware components of a SCADA system for a power system and explain the application of SCADA in monitoring and control of power system.

(15 marks)

Or

- (b) Describe the role of synchronous condenser and static VAR system in voltage control.

(15 marks)

[4 × 15 = 60 marks]