Program: BE Electrical Engineering

Curriculum Scheme: Revised - 2012

Examination: Third Year Semester V

Course Code: EEC501 and Course Name: Protection and Switchgear Engineering (PSE)

Time: 1-hour Max. Marks: 50

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Note to the students: - All the Questions are compulsory and carry equal marks.

Q1.	For protection of parallel feeders fed from one end the relays required are
Option A:	Non-directional relays at the source end and directional relays at the load end.
Option B:	Non-directional relays at both the ends.
Option C:	Directional relays at the source end and non-directional at the load end.
Option D:	Directional relays at both the ends.
Q2.	In a 3-step distance protection, the reach of the three zones of the relay at the beginning of the first line typically extends up to
Option A:	100% of first line, 50% of second line, 20% of the third line.
Option B:	80% of first line, 50% of second line, 20% of the third line.
Option C:	80% of first line, 20% of second line, 10% of the third line.
Option D:	50% of first line, 50% of second line, 20% of the third line.
Q3.	Earth fault current is generally ____than short circuit current
Option A:	Less
Option B:	More
Option C:	Equal to
Option D:	Infinity
Q4.	In carrier current protection the purpose of the wave trap is for
Option A:	Trapping power frequency waves.
Option B:	Trapping high frequency waves entering into generators/ transformer unit.
Option C:	Connects the high-frequency equipment to one of the line conductors.
Option D:	Separate the power equipment from the high-power line voltage.
Q5.	Which of the following relay operates when there is a vector difference between two or more similar electrical quantities?
Option A:	IDMT relay
Option B:	Differential protection scheme
Option C:	Earth fault relay

Option D:	Mho relay
Q6.	Amplitude comparator compares .....
Option A:	Compares magnitude of two or more electrical quantities
Option B:	Compares phase and angle of electrical quantities
Option C:	Compares both amplitude and phase of electrical quantities
Option D:	Compare power factor of electrical quantities only
Q7.	The neutral of 10 MVA, 11KV alternator is earthed through a resistance of 5 ohms. The earth relay is set to operate at 0.75A. The CT's have a ratio of 1,000/5. What percentage of the alternator winding is protected
Option A:	85%
Option B:	88.20%
Option C:	15%
Option D:	11.80%
Q8.	The magnitude of earth fault current for a given fault position within a winding depends upon
Option A:	The winding connections only
Option B:	The method of neutral grounding only
Option C:	The winding connections and the method of neutral grounding both
Option D:	Unmatched characteristics of CTs
Q9.	For preventing the operation of Merz-price protection scheme on inrush of magnetizing current
Option A:	The relay restraining coil is biased with second harmonic current
Option B:	Time lag is provided in the relay
Option C:	Relay sensitivity is reduced by employing a shunt
Option D:	The relay restraining coil is biased with Fourth harmonic current
Q10.	The main function of under voltage protective device generally employed with a motor starter is to
Option A:	Open the supply circuit on failure of power supply
Option B:	Control the motor voltage
Option C:	Prevent the opening of supply circuit
Option D:	Short the supply circuit on failure of power supply
Q11.	A three phase 11/66 KV Delta/Star transformer protected by Merz - Price scheme has CT ratio of 400/5 on LT side. Ratio of CT on HT Side will be equal to
Option A:	1:23
Option B:	23:01
Option C:	23:03
Option D:	3:23
Q12.	For the protection of an exceptionally long extra high-voltage lines, the protective relay used is

Option A:	Percentage differential relay
Option B:	Reactance type distance relay
Option C:	Over currently with extremely inverse characteristics
Option D:	Mho type distance relay
Q13.	What do protective relays provide?
Option A:	Provide additional safety to the circuit breaker in its operation.
Option B:	Close the contacts when the actuating quantity attains a certain predetermined value.
Option C:	Earth or ground any stray voltage protection
Option D:	Limit the arcing current during the circuit breaker operation.
Q14.	Instantaneous relay should operate within
Option A:	0.0001sec
Option B:	0.001sec
Option C:	0.01sec
Option D:	0.1sec
Q15.	The most efficient torque producing actuating structure for the induction type relays is
Option A:	Watt hour meter structure
Option B:	Shaded pole structure
Option C:	Induction cup structure
Option D:	Single induction loop structure
Q16.	In the basic trip circuit third part/element consist of
Option A:	Primary winding of a CT which is connected in series with the line to be protected.
Option B:	Trip coil.
Option C:	Secondary of the CT and the operating coil.
Option D:	Relay contact.
Q17.	Why is an isolator installed?
Option A:	To isolate one portion of the circuit from another circuit.
Option B:	As a substitute of circuit breaker.
Option C:	It is used on either side of circuit breaker.
Option D:	Dependence on circuit breaker.
Q18.	The secondary winding of which of the following instrument transformer is always kept closed?
Option A:	Current transformer
Option B:	Voltage transformer
Option C:	Power transformer
Option D:	Step down transformer
Q19.	Which of the following equipment is used to limit short circuit current level in a

	Sub Station?
Option A:	Isolator
Option B:	Lightning switch
Option C:	Coupling capacitor
Option D:	Series reactor
Q20.	The arc voltage produced in the circuit breaker is always
Option A:	In phase with arc current
Option B:	Leading the arcing current by 90 degrees
Option C:	lagging the arcing current by 90 degrees
Option D:	Lead & lag current by 90 degrees
Q21.	The fuse rating is expressed in terms of
Option A:	Current (A)
Option B:	Voltage (V)
Option C:	VAR
Option D:	KVA
Q22.	Desired tripping of a circuit breaker is done which process?
Option A:	Manually
Option B:	Automatically
Option C:	That it should give warning
Option D:	By Inspection
Q23.	A thermal protection switch provides protection against
Option A:	Overload condition
Option B:	Temperature
Option C:	Short circuit condition
Option D:	Over voltage condition
Q24.	What is the full form of MCB
Option A:	Major circuit breaker
Option B:	Medium circuit breaker
Option C:	Miniature circuit breaker
Option D:	Minor circuit breaker
Q25.	What is the arc quenching medium used in Vacuum circuit breakers?
Option A:	Air
Option B:	Oil
Option C:	Pressurized Air
Option D:	Vacuum

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	B
Q3.	A
Q4	B
Q5	B
Q6	A
Q7	B
Q8.	C
Q9.	A
Q10.	A
Q11.	B
Q12.	D
Q13.	B
Q14.	C

Q15.	C
Q16.	B
Q17.	A
Q18.	A
Q19.	D
Q20.	A
Q21.	A
Q22.	B
Q23.	A
Q24.	C
Q25.	D