Code No: 56011 **Set No. 1**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
III B.Tech. II Sem., II Mid-Term Examinations, April – 2014
COMPUTER METHODS IN POWER SYSTEMS
Objective Exam

Name: _____ Hall Ticket No. | | | | | | A | | | | |

Answer All Questions. All Questions Carry Equal Marks.Time: 20 Min. Marks: 10.

I Choose the correct alternative:

1. The most common type of fault in overhead lines is [ ]
(a) phase to ground (b) phase to phase (c) line to line (d) line to ground

2. To limit short circuit current _____ are used at various points in the power system [ ]
(a) resistors (b) reactors (c) inductors (d) capacitors

3. If the %reactance of the system up to the fault point is 20% and the base kva is 10000 then short circuit kva is [ ]
(a) 50000 (b) 20000 (c) 10000 (d) 2000

4. The positive sequence component of voltage at the point of fault is zero when it is a ____ fault [ ]
(a) 3 phase (b) L-L (c) L-L-G (d) L-G

5. The angle δ in the swing equation is [ ]
(a) angle between stator voltage and current
(b) angular displacement of the rotor with respect to the stator
(c) angular displacement of the stator mmf with respect to a synchronously rotating axis
(d) angular displacement of an axis fixed to the rotor with respect to a synchronously rotating axis.

6. The transient stability of the power system can be effectively improved by [ ]
(a) excitation improvement (b) phase shifting transformer
(c) single pole switching of circuit breakers (d) increasing turbine valve opening

7. During a disturbance on a synchronous machine the rotor swings from A to B before finally settling down to a steady state at point C on the power angle curve. The speed of the machine during oscillation is synchronous at points [ ]
(a) A and B (b) A and C (c) B and C (d) only at C

8. Steady state stability of a power system is the ability of the power system to maintain [ ]
(a) voltage at rated level (b) frequency at 50 Hz
(c) a spinning reserve margin at all times
(d) synchronism between machines and on external tie lines

9. Which of the following is the method of improving power system steady state stability [ ]
(a) using machines of lower inherent impedances (b) higher excitation voltages
(c) quick response excitation system (d) all the above

10. Steady state stability limit is _____ transient stability limit. [ ]
(a) greater than (b) lesser than (c) equal to (d) no relation to

Cont.....2

II Fill in the blanks

11. When all the three phases are short circuited, it gives rise to _____ currents.

12 Short circuit KVA is obtained by multiplying the base KVA by _____.

13. When a line to ground fault occurs, the current in a faulted phase is 100A. The zero sequence current in this case will be _____.

14. The following sequence currents were recorded in a power system under a fault condition: $I_{positive}$=j1.653pu, $I_{negative}$=-j0.5pu, I_{zero}=-j1.153pu. The fault is _____ type.

15. A power system is subjected to a fault which makes the zero sequence component of current equal to zero. The nature of fault is _____ .

16. If all the sequence voltages at the fault point in a power system are equal then the fault is a _____.

17. A transmission line has a total series reactance of 0.2pu. Reactive power compensation is applied at the midpoint of the line and it is controlled such that the midpoint voltage of the transmission line is always maintained at 0.98pu. If voltage at both ends is maintained at 1pu, the steady state power transfer limit of transmission line is _____pu.

18. For stability and economic reasons we operate the transmission line with power angle in the range _____ .

19. The power angle characteristic of single machine infinite bus system is P_c=2sinδ pu. It is operating at δ=30. The synchronizing power coefficient at the operating point is _____.

20. The synchronization coefficient between two area of a 2-area power system is _____.

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Code No: 56011 **Set No. 2**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

III B.Tech. II Sem., II Mid-Term Examinations, April – 2014

COMPUTER METHODS IN POWER SYSTEMS

Objective Exam

Name: _____ Hall Ticket No. | | | | | | A | | | | |

Answer All Questions. All Questions Carry Equal Marks.Time: 20 Min. Marks: 10.

I Choose the correct alternative:

1. The positive sequence component of voltage at the point of fault is zero when it is a ____ fault [ ]
(a) 3 phase (b) L-L (c) L-L-G (d) L-G

2. The angle δ in the swing equation is [ ]
(a) angle between stator voltage and current
(b) angular displacement of the rotor with respect to the stator
(c) angular displacement of the stator mmf with respect to a synchronously rotating axis
(d) angular displacement of an axis fixed to the rotor with respect to a synchronously rotating axis.

3. The transient stability of the power system can be effectively improved by [ ]
(a) excitation improvement (b) phase shifting transformer
(c) single pole switching of circuit breakers (d) increasing turbine valve opening

4. During a disturbance on a synchronous machine the rotor swings from A to B before finally settling down to a steady state at point C on the power angle curve. The speed of the machine during oscillation is synchronous at points [ ]
(a) A and B (b) A and C (c) B and C (d) only at C

5. Steady state stability of a power system is the ability of the power system to maintain [ ]
(a) voltage at rated level (b) frequency at 50 Hz
(c) a spinning reserve margin at all times
(d) synchronism between machines and on external tie lines

6. Which of the following is the method of improving power system steady state stability [ ]
(a) using machines of lower inherent impedances (b) higher excitation voltages
(c) quick response excitation system (d) all the above

7. Steady state stability limit is _____ transient stability limit. [ ]
(a) greater than (b) lesser than (c) equal to (d) no relation to

8. The most common type of fault in overhead lines is [ ]
(a) phase to ground (b) phase to phase (c) line to line (d) line to ground

9. To limit short circuit current _____ are used at various points in the power system [ ]
(a) resistors (b) reactors (c) inductors (d) capacitors

10 .If the %reactance of the system up to the fault point is 20% and the base kva is 10000 then short circuit kva is [ ]
(a) 50000 (b) 20000 (c) 10000 (d) 2000

Cont.....2

II Fill in the blanks

11. The following sequence currents were recorded in a power system under a fault condition: $I_{positive}$=j1.653pu, $I_{negative}$=-j0.5pu, I_{zero}=-j1.153pu. The fault is _____ type.

12. A power system is subjected to a fault which makes the zero sequence component of current equal to zero. The nature of fault is _____ .

13. If all the sequence voltages at the fault point in a power system are equal then the fault is a _____.

14. A transmission line has a total series reactance of 0.2pu. Reactive power compensation is applied at the midpoint of the line and it is controlled such that the midpoint voltage of the transmission line is always maintained at 0.98pu. If voltage at both ends is maintained at 1pu, the steady state power transfer limit of transmission line is _____pu.

15. For stability and economic reasons we operate the transmission line with power angle in the range _____ .

16. The power angle characteristic of single machine infinite bus system is P_c=2sinδ pu. It is operating at δ=30. The synchronizing power coefficient at the operating point is _____.

17. The synchronization coefficient between two area of a 2-area power system is _____.

18. When all the three phases are short circuited, it gives rise to _____ currents.

19 Short circuit KVA is obtained by multiplying the base KVA by _____.

20. When a line to ground fault occurs, the current in a faulted phase is 100A. The zero sequence current in this case will be _____.

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Code No: 56011 **Set No. 3**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

III B.Tech. II Sem., II Mid-Term Examinations, April – 2014

COMPUTER METHODS IN POWER SYSTEMS

Objective Exam

Name: _____ Hall Ticket No. | | | | | | A | | | | |

Answer All Questions. All Questions Carry Equal Marks.Time: 20 Min. Marks: 10.

I Choose the correct alternative:

1. The transient stability of the power system can be effectively improved by [ ]
   (a) excitation improvement (b) phase shifting transformer
   (c) single pole switching of circuit breakers (d) increasing turbine valve opening

2. During a disturbance on a synchronous machine the rotor swings from A to B before finally settling down to a steady state at point C on the power angle curve. The speed of the machine during oscillation is synchronous at points [ ]
   (a) A and B (b) A and C (c) B and C (d) only at C

3. Steady state stability of a power system is the ability of the power system to maintain [ ]
   (a) voltage at rated level (b) frequency at 50 Hz
   (c) a spinning reserve margin at all times
   (d) synchronism between machines and on external tie lines

4. Which of the following is the method of improving power system steady state stability [ ]
   (a) using machines of lower inherent impedances (b) higher excitation voltages
   (c) quick response excitation system (d) all the above

5. Steady state stability limit is _____ transient stability limit. [ ]
   (a) greater than (b) lesser than (c) equal to (d) no relation to

6. The most common type of fault in overhead lines is [ ]
   (a) phase to ground (b) phase to phase (c) line to line (d) line to ground

7. To limit short circuit current _____ are used at various points in the power system [ ]
   (a) resistors (b) reactors (c) inductors (d) capacitors

8 .If the %reactance of the system up to the fault point is 20% and the base kva is 10000 then short circuit kva is [ ]
   (a) 50000 (b) 20000 (c) 10000 (d) 2000

9. The positive sequence component of voltage at the point of fault is zero when it is a ____ fault [ ]
   (a) 3 phase (b) L-L (c) L-L-G (d) L-G

10. The angle δ in the swing equation is [ ]
    (a) angle between stator voltage and current
    (b) angular displacement of the rotor with respect to the stator
    (c) angular displacement of the stator mmf with respect to a synchronously rotating axis
    (d) angular displacement of an axis fixed to the rotor with respect to a synchronously rotating axis.

Cont.....2

II Fill in the blanks

11. When all the three phases are short circuited, it gives rise to _____ currents.

12 Short circuit KVA is obtained by multiplying the base KVA by _____.

13. When a line to ground fault occurs, the current in a faulted phase is 100A. The zero sequence current in this case will be _____.

14. The following sequence currents were recorded in a power system under a fault condition: $I_{positive}$=j1.653pu, $I_{negative}$=-j0.5pu, I_{zero}=-j1.153pu. The fault is _____ type.

15. A power system is subjected to a fault which makes the zero sequence component of current equal to zero. The nature of fault is _____ .

16. If all the sequence voltages at the fault point in a power system are equal then the fault is a _____.

17. A transmission line has a total series reactance of 0.2pu. Reactive power compensation is applied at the midpoint of the line and it is controlled such that the midpoint voltage of the transmission line is always maintained at 0.98pu. If voltage at both ends is maintained at 1pu, the steady state power transfer limit of transmission line is _____pu.

18. For stability and economic reasons we operate the transmission line with power angle in the range _____ .

19. The power angle characteristic of single machine infinite bus system is P_c=2sinδ pu. It is operating at δ=30. The synchronizing power coefficient at the operating point is _____.

20. The synchronization coefficient between two area of a 2-area power system is _____.

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Code No: 56011 **Set No. 4**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
III B.Tech. II Sem., II Mid-Term Examinations, April – 2014
COMPUTER METHODS IN POWER SYSTEMS
Objective Exam

Name: _____ Hall Ticket No. | | | | | | A | | | | |

Answer All Questions. All Questions Carry Equal Marks.Time: 20 Min. Marks: 10.

I Choose the correct alternative:

1. Steady state stability of a power system is the ability of the power system to maintain [ ]
(a) voltage at rated level (b) frequency at 50 Hz
(c) a spinning reserve margin at all times
(d) synchronism between machines and on external tie lines

2. Which of the following is the method of improving power system steady state stability [ ]
(a) using machines of lower inherent impedances (b) higher excitation voltages
(c) quick response excitation system (d) all the above

3. Steady state stability limit is _____ transient stability limit. [ ]
(a) greater than (b) lesser than (c) equal to (d) no relation to

4. The most common type of fault in overhead lines is [ ]
(a) phase to ground (b) phase to phase (c) line to line (d) line to ground

5. To limit short circuit current _____ are used at various points in the power system [ ]
(a) resistors (b) reactors (c) inductors (d) capacitors

6 .If the %reactance of the system up to the fault point is 20% and the base kva is 10000 then short circuit kva is [ ]
(a) 50000 (b) 20000 (c) 10000 (d) 2000

7. The positive sequence component of voltage at the point of fault is zero when it is a ____ fault [ ]
(a) 3 phase (b) L-L (c) L-L-G (d) L-G

8. The angle δ in the swing equation is [ ]
(a) angle between stator voltage and current
(b) angular displacement of the rotor with respect to the stator
(c) angular displacement of the stator mmf with respect to a synchronously rotating axis
(d) angular displacement of an axis fixed to the rotor with respect to a synchronously rotating axis.

9. The transient stability of the power system can be effectively improved by [ ]
(a) excitation improvement (b) phase shifting transformer
(c) single pole switching of circuit breakers (d) increasing turbine valve opening

10. During a disturbance on a synchronous machine the rotor swings from A to B before finally settling down to a steady state at point C on the power angle curve. The speed of the machine during oscillation is synchronous at points [ ]
(a) A and B (b) A and C (c) B and C (d) only at C

Cont.....2

II Fill in the blanks

11. For stability and economic reasons we operate the transmission line with power angle in the range _____ .

12. The power angle characteristic of single machine infinite bus system is $P_c=2\sin\delta$ pu. It is operating at $\delta=30$. The synchronizing power coefficient at the operating point is _____.

13. The synchronization coefficient between two area of a 2-area power system is _____.

14. When all the three phases are short circuited, it gives rise to _____ currents.

15 Short circuit KVA is obtained by multiplying the base KVA by _____.

16. When a line to ground fault occurs, the current in a faulted phase is 100A. The zero sequence current in this case will be _____.

17. The following sequence currents were recorded in a power system under a fault condition: $I_{positive}$=j1.653pu, $I_{negative}$=-j0.5pu, I_{zero}=-j1.153pu. The fault is _____ type.

18. A power system is subjected to a fault which makes the zero sequence component of current equal to zero. The nature of fault is _____ .

19. If all the sequence voltages at the fault point in a power system are equal then the fault is a _____.

20. A transmission line has a total series reactance of 0.2pu. Reactive power compensation is applied at the midpoint of the line and it is controlled such that the midpoint voltage of the transmission line is always maintained at 0.98pu. If voltage at both ends is maintained at 1pu, the steady state power transfer limit of transmission line is _____pu.

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