**COMPUTER METHODS IN POWER SYSTEM AND POWER SYSTEM OPERATION AND CONTROL**

1. **The number of branches in a tree is \_\_\_\_\_\_\_\_\_\_\_ the number of branches in a graph.**
2. Less than (b)More than

(c)Equal to (d) None

**Ans: a**

1. **Steady-state stability of a power system is the ability of the power system to**
2. Maintain voltage at the rated voltage level
3. Maintain frequency exactly at 50 Hz
4. Maintain a spinning reserve margin at all times
5. Maintain synchronism between machines and on external tie lines

**Ans: d**

1. **In a network, we have 7 nodes and 5 independent loops, then the numbers of elements in this network are equal to \_\_\_\_\_\_\_\_\_.**

(a) 7 (b) 5

(c) 12 (d) 11

**Ans: d**

1. **The convergence characteristics of GS method is**
2. Quadratic (b)Geometric

(c)Linear (d) Straight

**Ans: c**

1. **The graph that possesses isomorphism property has \_\_\_\_\_\_\_\_\_\_\_\_.**

(a) Same cut set matrix (b) Same tie set matrix

(c)Same incidence matrix (d) None

**Ans: c**

1. **The power angle is mainly affected by \_\_\_\_\_\_\_\_\_\_\_**.
2. Inertia constant (b)Transfer reactance

(c)Both (a) and (b) (d) None

**Ans: b**

1. **In a dual network, the resistance of loop basis is replaced with \_\_\_\_\_\_\_\_\_\_ in nodal basis.**
2. Inductance (b)Capacitance

(c)Conductance (d) None

**Ans: c**

1. **The function of a pilot exciter is to \_\_\_\_\_\_\_\_\_\_\_\_\_.**
2. Supply current to the rotor circuit
3. Maintain constant voltage excitation for the main exciter
4. Supply variable excitation for the main exciter
5. None of the above

**Ans: b**

1. **For a load flow solution the quantities normally specified at a voltage controlled bus are**
2. P and Q (b) P and V

(c) Q and V (d) P and S

**Ans: b**

1. **A voltage controlled bus is treated as a load bus subsequent iteration when its**

(a)Voltage limit is violated (b) Active power limit is violated

(c)Reactive power limit is violated (d) Phase angle limit is violated

**Ans: c**

1. **For an incidence matrix, the algebraic sum of the column entries will be**
2. I (b)0

(c) -1 (d) None

**Ans: b**

1. **For load flow solution, quantities specially at load bus are**
2. P and Q (b)P and V

(c) Q and V (d) P and S

**Ans: a**

1. **The study of load flow is for**
2. Fault calculations (b)Stability studies

(c) Load frequency control (d) System planning

**Ans: d**

1. **The cut-set schedule gives the relation between**
2. Branch currents and link currents
3. Branch voltages and tree branch voltages
4. Branch voltages and link voltages
5. Branch currents and tree currents

**Ans: b**

1. **The incident branch to a node gives as \_\_\_\_\_\_\_\_\_\_\_\_.**
2. Degree of node (b)Order of node
3. Both (d)None

**Ans: a**

1. **The objective of optimal scheduling of hydro-thermal unit is \_\_\_\_\_\_\_\_\_\_.**

(a)Water discharge minimization (b) Storage of water

(c)Both (a) and (b) (d) None of the above

**Ans: c**

1. **The parameter specified at slack bus are**
2. P and Q (b)V and S
3. P and V (d)Q and V

**Ans: b**

1. **List of instructions given to a computer is known as**
2. Flowchart (b)Algorithm

(c) Both (d) None

**Ans: b**

1. **\_\_\_\_\_\_\_\_\_\_\_ method is simple in nature**

(a)GS method (b) NR method

(c)FDLF method (d) All the above

**Ans: a**

1. **Most serious consequence of a major uncleared short circuit fault could be**

(a)Fuse blowing (b) High voltage drop

(c)Fire hazard (d) None

**Ans: c**

1. **The complement of tree is**

(a)Branch (b)Links

(c)Co-tree (d)None

**Ans: c**

1. **The fault current in L-G fault is 100A. the zero sequence current under this condition will be**

(a)33.3A (b)66.6A

(c)Zero (d)100A

**Ans: a**

1. **The automatic load frequency control loop is \_\_\_\_\_\_\_\_\_\_\_ control mechanism.**

(a)Slow (b)Faster

(c)Slow as well as fast (d)None of the above

**Ans: a**

1. **Depending up on the nature of disturbance, the stability studies are classified into \_\_\_\_\_\_\_\_ types**

(a)Two (b)Three

(c)Four (d)Five

**Ans: b**

1. **The stability of the power system is not affected by**

(a)Generator reactance (b)Line reactance

(c)Line losses (d)Excitation of generators

**Ans: c**

1. **Steady-state stability of a power system is improved by**
2. Reducing fault clearing time
3. Using double circuit line instead of single circuit line
4. Single pole switching
5. Decreasing generator inertia

**Ans: b**

1. **NR method is superior to GS method for**
2. Consumes less time per iteration
3. Less iterative methods
4. Independent of size of system
5. No effect on convergence characteristics even after selecting slack bus

**Ans: d**

1. **Synchronizing power coefficient is also known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**

(a)Electrical stiffness of synchronous machine (b)Power angle

(c)Transfer reactance (d)None

**Ans: a**

1. **The power system are operated with power angle around**

(a)10o (b)30o

(c)70o (d)80o

**Ans: b**

1. **The use of speed breakers can**

(a)Increase the transient stability (b)Decrease the transient stability

(c)Increase the steady state stability (d)Increase the steady state stability

**Ans: a**

1. **If the torque angle increase without limit, the system is \_\_\_\_\_\_\_\_\_.**

(a)Stable (b)Unstable

(c)Marginally stable (d)None

**Ans: b**

1. **The limit of transient is \_\_\_\_\_\_\_\_\_ the steady state limit.**

(a)Greater than (b)Less than

(c)Equal to (d)None

**Ans: b**

1. **\_\_\_\_\_\_\_\_\_\_\_\_ cooling is normally employed for synchronous capacitors.**

(a)Oil (b)Air

(c)Water (d)None of the above

**Ans: b**

1. **The closed path of a graph forms**

(a)Loop (b)Mesh

(c)Loop (or) mesh (d)None

**Ans: c**

1. **Equal area criterion can be applicable to**

(a)Multi machine stability (b)None

(c)One machine system connected to infinite bus (d)Both (a) and (b)

**Ans: c**

1. **Voltage of a particular bus can be controlled by controlling**

(a)Phase angle (b)Reactive power of bus

(c)Bus active power (d)Phase angle and reactive power

**Ans: b**

1. **The solution of point by point method adopted to solve the swing equation for**

(a)Power angle (b)Critical clearing time

(c)Both (d)None

**Ans: b**

1. **When compared to a thermal plant, the operating cost and capital cost of a hydro-electric plant are\_\_\_\_\_\_\_\_\_\_\_.**

(a)High and low (b)Low and high

(c)Both high (d)Both low

**Ans: b**

1. **In hydro-thermal unit, the whole or part of the base load can be supplied by \_\_\_\_\_\_\_\_\_.**
2. Reservoir-type hydro-plants
3. Run-off river-type hydro-plants
4. Thermal plants
5. Reservoir-type hydro-plants and thermal plants with proper coordination

**Ans: b**

1. **The optimization problem in a hydro-thermal system is stated as determining\_\_\_\_\_\_\_\_ so as to minimize the cost of thermal generation.**

(a)Load demand (b)Water storage

(c)Water discharge rate (d)Water inflow rate

**Ans: c**

1. **For optimality in a hydro-thermal system, the condition is that the gradient vector should be \_\_\_\_\_\_\_\_\_\_.**

(a)Zero (b)Positive

(c)Negative (d)None of the above **Ans: a**

1. **For solving optimization problem of a multi-hydro and multi-thermal plant, the technique used is \_\_\_\_\_\_\_\_\_\_\_.**

(a)Discretization (b)Decomposition

(c)Decoupled (d)None

**Ans: b**

1. **The power generation of a hydro-plant PGH is directly proportional to,**

(a)Water discharge (b)Plant head

(c)Both (a) and (b) (d)None of the above

**Ans: c**

1. **\_\_\_\_\_\_\_\_\_\_\_ hydro-thermal co-ordination is done for the available water and is to be used in a given period of 24 hours.**

(a)Short-term (b)Long-term

(c)Both (a) and (b) (d)None of the above **Ans: a**

1. **The solution of the swing equation can be obtained by \_\_\_\_\_\_\_\_\_\_ method.**

(a)Step by step (b)Point by point

(c)Both (d)None

**Ans: c**

1. **Hydro-thermal co-ordination is necessary only in countries with \_\_\_\_\_\_\_\_\_.**

(a)Ample coal resources (b)Ample water resources

(c)Both (a) and (b) (d)None of the above

**Ans: b**

1. **The dashpot feedback system is required to achieve the stable performance of a speed-governing system of , \_\_\_\_\_\_\_\_\_\_\_\_\_.**

(a)Steam turbines (b)Hydro-turbines

(c)Either (a) or (b) (d)Both (a) and (b)

**Ans: b**

1. **The secondary governing system of a reheat unit corresponds to \_\_\_\_\_\_\_\_\_\_\_\_\_.**

(a)Frequency of the turbine (b)Speed of the main shaft

(c)Both (a) and (b) (d)Either (a) or (b)

**Ans: a**

1. **In the combined operation of steam plant and run-off river plants, the sites of hydro and steam plants can be found with the help of \_\_\_\_\_\_\_\_\_\_\_\_.**

(a)Input-output curve (b)Load curve

(c)Demand curve (d)Chronological load curve

**Ans: d**

1. **The emergency stop valves in an anticipatory speed-governing system are located adjacent to,**

(a)The main governing valves (b)The servomotor

(c)The speed relays (d)All the above

**Ans: a**