

NADAR SARASWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.

Course/Branch : B.E., / EEE	Year / Semester : IV / VII	Format No.	NAC/TLP-07a.13
Subject Code : EE8702	Subject Name: Power System operation and Control	Rev. No.	02
Unit No : IV	Unit Name :Economic Operation of Power System	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

S. No.	Objective Questions (MCQ /True or False / Fill up with Choices)	BTL
1	<p>The objective of state estimation is to obtain the best possible value of</p> <p>(A) Bus voltage magnitude and angle</p> <p>(B) Bus active power</p> <p>(C) Bus reactive power</p> <p>(D) Bus apparent power</p>	L1
2	<p>The most applicable state estimation algorithm is</p> <p>(A) Load flow</p> <p>(B) Optimum load flow</p> <p>(C) Weighted least square</p> <p>(D) None of above</p>	L2
3	<p>What causes imperfect measurement of power system data?</p> <p>(A) Error of instruments</p> <p>(B) Data loss in transmitting</p> <p>(C) Failure of measuring instruments</p> <p>(D) All of above</p>	L2
4	<p>The output of state estimation is used in</p> <p>(A) Economical dispatch and security studies</p> <p>(B) Load flow</p> <p>(C) Analysis of Fault</p> <p>(D) Stability Study</p>	L1

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5	<p>In least square estimation method, The weight-age of error in measurement vector is</p> <p>(A) Equal</p> <p>(B) Not Equal</p> <p>(C) Depend on measurement</p> <p>(D) Not easy to define</p>	L1
6	<p>Which estimation method is best suitable for state estimation in a power system?</p> <p>(A) Least square estimation</p> <p>(B) Equal Weighted Least square estimation</p> <p>(C) Weighted least square estimation</p> <p>(D) Fast decoupled</p>	L2
7	<p>Weighted least square is more accurate than least square because</p> <p>(A) Weight on each error is define and use during estimation</p> <p>(B) Weighted of measurement is find prior to estimation</p> <p>(C) Equal weighted is estimated</p> <p>(D) Method is executed with assumption</p>	L2
8	<p>For better estimation, the covariance of the error of estimation is</p> <p>(A) High</p> <p>(B) Low</p> <p>(C) Medium</p> <p>(D) 0</p>	L1

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9	<p>Power system having N number of buses, the state variable ‘x’ may be defined as _____number of buses voltage angle and _____number of bus voltage magnitude</p> <p>(A) N-2,N-1</p> <p>(B) N-1,N</p> <p>(C) N,N</p> <p>(D) N,N-1</p>	L1
10	<p>Redundancy of state estimation is</p> <p>(A) 0.5 to 1</p> <p>(B) 1 to 2</p> <p>(C) 1.5 to 2.8</p> <p>(D) More than 3</p>	L2
11	<p>The problem of state estimation is</p> <p>(A) Linear</p> <p>(B) Non-linear</p> <p>(C) Algebraic</p> <p>(D) Not define properly</p>	L2
12	<p>State estimation of power system is solved using</p> <p>(A) Batch processing</p> <p>(B) Sequential processing</p> <p>(C) Both a and b</p> <p>(D) None of above</p>	L1

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13	<p>Which of the following case is consider for state estimation for power system</p> <p>(A) Only active and reactive power injection</p> <p>(B) Only active and reactive line flow</p> <p>(C) Either a or b</p> <p>(D) Both a and b</p>	L1
14	<p>In only active and reactive power injection, 2N number of elements of measurement vector 'z' is used to estimate _____ number of elements of state vector 'x'</p> <p>(A) N-1</p> <p>(B) 2N-1</p> <p>(C) N</p> <p>(D) 2N-2</p>	L2
15	<p>State estimation of power system by only active and reactive power injection is same as</p> <p>(A) Load flow study</p> <p>(B) Optimum power flow analysis</p> <p>(C) Economical dispatch</p> <p>(D) Load forecasting</p>	L2
16	<p>State estimation of power system by only active and reactive line flow have good redundancy if</p> <p>(A) Assume more number of imaginary buses</p> <p>(B) Increase active and reactive line flow data by assume more imaginary line in power system</p> <p>(C) Power system has enough number of transmission lines which have two meters at each end of all transmission lines</p>	L1

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	(D) All of above	
17	<p>The relation between the measurement vector 'y' and vector 'x' is as follows $y=2x^2+x+r$ Estimate 'x' for $\epsilon=0.001$ using WLSE method. Assume the initial estimation of x is 1 and measurement value of 'y' is 9.8.</p> <p>(A) 1.977841</p> <p>(B) 1.556678</p> <p>(C) 2.000000</p> <p>(D) 2.556789</p>	L1
18	<p>For state estimation for only active and reactive power injection, The active power injection measurement vector is define as</p> <p>(A) $\Delta Z_p = H_2 \Delta X \delta + r_p$</p> <p>(B) $\Delta Z_p = H_1 \Delta X \delta + r_p$</p> <p>(C) $\Delta Z_p = H_1 \Delta X v + r_p$</p> <p>(D) $\Delta Z_p = H_1 \Delta X \delta + r_q$</p>	L2
19	<p>When WLSE method is applied for line flow only algorithm then the estimation of 'x' for power system is</p> <p>(A) $x_{est} = ATWA^{-1}ATF x_{est}, Z$</p> <p>(B) $x_{est} = ATWA^{-1}ATWF x_{est}, Z$</p> <p>(C) $x_{est} = ATWA^{-1}ATW^{-1}F x_{est}, Z$</p> <p>(D) None of above</p>	L2
20	<p>The solution of state estimation in power system is affected by</p> <p>(A) Ill conditioning</p> <p>(B) Computer storage requirement</p>	L1

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	(C) Time requirement (D) All of above	
21	The condition number for Gain Matrix ‘G’ is define as (A) Rank of Gain Matrix ‘G’ (B) Ratio of largest to smallest eigenvalue (C) GG^{-1} (D) Inverse of G	L1
22	The Gain Matrix ‘G’ of power system becomes more ill-condition if the condition number is (A) Decrease in number (B) Moderate in number (C) Increase in number (D) 1	L2
23	Power system is divided into _____sub-system to reduce computational burden in state estimation (A) 3 (B) 2 (C) 4 (D) 5	L2
24	To derive external equivalency of power system, the subsystems are define as (A) Internal (B) External	L1

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	<p>(C) Boundary</p> <p>The method to find bad data detection is</p> <p>(A) Fast decoupled</p> <p>(B) Newton Raphson</p> <p>(C) Chi square</p> <p>(D) None of above</p>	
25	<p>Identification of bad data is done by</p> <p>(A) Calculate the elements for error in the measurement vector</p> <p>(B) Calculate difference of error in the measurement vector</p> <p>(C) Calculate the error in measurement vector</p> <p>(D) None of above</p>	L1
26	<p>Suppression of bad data is done by selecting estimation index function as</p> <p>(A) Quadratic</p> <p>(B) Non-quadratic</p> <p>(C) Square</p> <p>(D) None of above</p>	L2
27	<p>Network observability is define as</p> <p>(A) All data of power system is observed</p> <p>(B) To find error in measurement data</p> <p>(C) To check the given measurement data is sufficient for state estimation</p> <p>(D) The ratio of measure data to error</p>	L2

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28	<p>The network is observable when the rank of jacobian matrix H is equal to</p> <p>(A) N</p> <p>(B) N-1</p> <p>(C) 2N</p> <p>(D) 2N-1</p>	L1
29	<p>The rank of jacobian matrix is depends on</p> <p>(A) Location of measurement</p> <p>(B) Type of measurement</p> <p>(C) Network topology</p> <p>(D) All of above</p>	L1
30	<p>Network observability is improve by</p> <p>(A) Pseudo measurement</p> <p>(B) Computer</p> <p>(C) Improve the measurement technique</p> <p>(D) None of above</p>	L2
31	<p>Practical stages of state estimation is</p> <p>(A) Network Topology processor</p> <p>(B) Observability analysis</p> <p>(C) Bad data processing and state estimation</p> <p>(D) All of above</p>	L2

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