MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

B.Tech– IVSem (MR 18-2018-19 Admitted Students)
I Mid Examination Subjective Question Bank

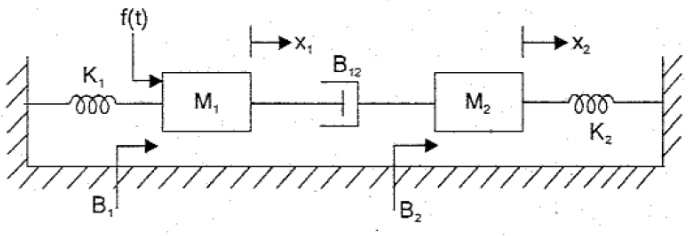
Subject: Control Systems **Branch :ECE**
Name of the faculty: B Anjaneyulu/Dr.A.Pradeep Kumar/R.Ravindra Reddy

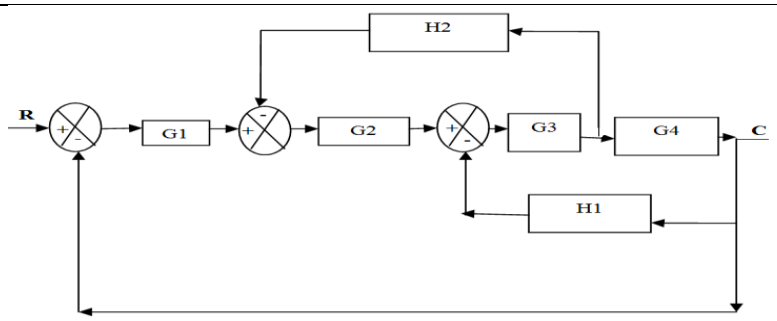
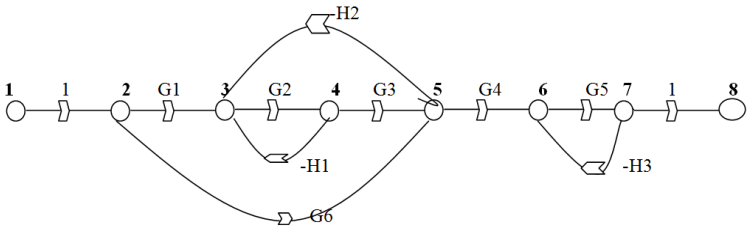
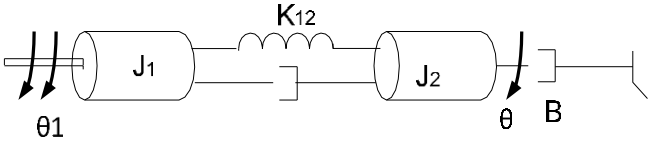
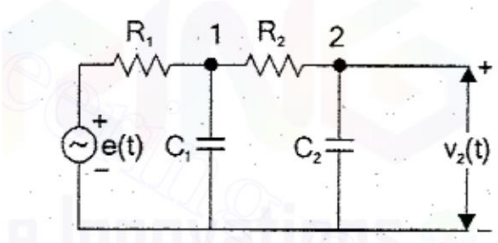
Descriptive questions

Instructions:

1. All the questions carry equal marks

2. Solve all the questions

Question No.	Questions	Bloom's Taxonomy Level	CO
	MODULE-I		
1.	Explain the differences between open loop and closed loop control systems with one example.	Understand	1
	OR		
2.	Classify the control systems.	Understand	1
3.	Contrast the effect of feedback on a) overall gain b) sensitivity of a system.	Analyze	1
	OR		
4.	Simplify the transfer function of the mechanical system as shown. 	Analyze	1
5.	Apply block diagram reduction technique to determine the overall transfer function (CS)/ R(S) of the following system	Apply	1

			
	OR		
6.	Apply signal flow graph (SFG) using Mason Gain Formula to Find the overall transfer function of the system. 	Apply	1
7.	Develop the transfer function $\theta(S)/\theta_1(S)$ for the given mechanical rotational system? 	Apply	1
	OR		
8.	Solve the transfer function of the electrical network $V_2(S)/E(S)$ 	Apply	1
	MODULE-II		
1.	Derive the response of a standard under damped second order system for unit step input.	Analyze	2
	OR		
2.	Derive the response of a standard undamped second order system for unit step input.	Analyze	2

3.	Explain steady state error with unit step input.	Understand	2
	OR		
4.	A unit feedback system has a open loop transfer function of $G(s)=10/[(s+1)(s+2)]$. Determine the steady state error for unit step input.	Understand	2
5.	The closed loop transfer function of a second order system is given by $200/(s^2+20s+200)$. Determine the damping ratio and natural frequency.	Analyze	2
	OR		
6.	Give the classification of second order systems depending on damping ratio and sketch respective response of systems for unit step input.	Analyze	2
7.	The open loop transfer function of a system is $G(s) = 16/[s(s+0.8)]$ with a feedback element $H(s)=Ks+1$ .Determine the nature of response C(t) to the unit step input.	Analyze	2
	OR		
8.	A unity feedback control system has an open loop transfer function $G(s)=10/[s(s+2)]$. Find the rise time, percentage overshoot, peak time and settling time for step input of 12 units.	Analyze	2
	MODULE-III		
1.	Define the BIBO stability, what is the requirement for BIBO stability.	Understand	3
	OR		
2.	What is characteristic equation and how their roots are related to stability.	Understand	3
3.	Test the stability of the system with the following characteristic equation by Routh Stability Criterion $2s^5+3s^4+2s^3+s^2+2s+2$.	Analyze	3
	OR		
4.	Test the stability of the system with the following characteristic equation by Routh Stability Criterion	Analyze	3

	$s^6+2s^5+8s^4+12s^3+20s^2+16s+16=0$.		

Signature of the Faculty **Signature of the HoD**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

B.Tech– IV Sem (MR 18)

I Mid Examination Objective Question Bank January 2020

Subject: CONTROL SYSTEMS (80209) **Branch : ECE**

Name of the faculty: B Anjaneyulu/Dr.A.Pradeep Kumar/R.Ravindra Reddy

1. For open control system which of the following statements is incorrect ? required for maintaining the ( )

a) Less expensive
b) Recalibration is not required quality of the output
c) Construction is simple and maintenance easy
d) Errors are caused by disturbances

2. In an open loop control system ( )
a) Output is independent of control input
b) Output is dependent on control input
c) Only system parameters have effect on the control output
d) None of the above

3. A control system in which the control action is somehow dependent on the output is known as
a) Closed loop system b) Semi closed loop system ( )
c) Open system d) None of the above

4. In closed loop control system, with positive value of feedback gain the overall gain of the system will ( )
a) Decrease b) increase c) be unaffected d) any of the above

5. Which of the following is an open loop control system ? ( )
a) Field controlled D.C. motor b) Ward leonard control
c) Metadyne d) Stroboscope

6. Which of the following statements is not necessarily correct for open control system ? ( )
a) Input command is the sole factor responsible for providing the control action
b) Presence of non-linearities causes malfunctioning
c) Less expensive
d) Generally free from problems of non-linearities

7.In open loop system ( )
a) the control action depends on the size of the system
b) the control action depends on system variables
c) the control action depends on the input signal
d) the control action is independent of the output

8. Which system has a tendency to oscillate ( )
a) Open loop system b) Closed loop system c) Both d) Neither of these

9. Force balancing equation of a mass elements is (where x = displacement) ( )
a) M d^2x/dt^2 b) M dx/dt c) M *x d) any of the above

10. If two blocks having gains A and B respectively are in series connection, find the resultant gain using block diagram reduction technique? ( )
a) A+B b) A*B c) A-B d) A/B

11. In signal flow graph input node is node having only---------- ( )
a) incoming branches b) outgoing branches c) both 1 and 2 d) none of the above

12. A good control system has all the following features except ( )
a) good stability b) slow response c) good accuracy d) sufficient power handling capacity

13. A car is running at a constant speed of 50 km/h, which of the following is the feedback element for the driver? ( )
a) Clutch b) Eyes c) Steering wheel d) None of the above

14.The initial response when the output is not equal to input is called ( )
a) Transient response b) Error response c) Dynamic response d) Either of the above

15. A control system working under unknown random actions is called ( )
a) computer control system b) digital data system
c) stochastic control system d) adaptive control system

16. An automatic toaster is a _____ loop control system ( )
a) open b) closed c) partially closed d) any of the above

16. Any externally introduced signal affecting the controlled output is called a ( )
a) feedback b) stimulus c) signal d) gain control

17.A closed loop system is distinguished from open loop system by which of the following ?( )
a) Servo mechanism b) Feedback c) Output pattern d) Input pattern

18.-----is a part of the human temperature control system. ( )
a) Digestive system b) Perspiration system c) Ear d) Leg movement

19.By which of the following the control action is determined when a man walks along a path?( )
a) Brain b) Hands c) Legs d) Eyes

20.Identify the closed loop system. ( )
a) Auto-pilot for an aircraft b) Direct current generator c) Car starter d) Electric switch

21.Which of the following devices are commonly used as error detectors in instruments ?

a) Vernistats b) Microsyns c)Resolvers d)Any of the above ( )

22.Which of the following should be done to make an unstable system stable ? ( )
a) The gain of the system should be decreased
b) The gain of the system should be increased
c) The number of poles to the loop transfer function should be increased
d) The number of zeros to the loop transfer function should be increased

23.As a result of introduction of negative feedback which of the following will not decrease?
a) Band width b) Overall gain c) Distortion d) Instability ( )

24.Regenerative feedback implies feedback with ( )
a) oscillations b) step input c) negative sign d) positive sign

25.The output of a feedback control system must be a function of ( )
a) reference and output b) reference and input
c) input and feedback signal d) output and feedback signal

26.Identify the open loop control system ( )
a) Ward Leonard control b) Field controlled D.C. motor c) Stroboscope d) Metadyne

27.A control system with excessive noise, is likely to suffer from ( )
a) saturation in amplifying stages b) loss of gain c) vibrations d) oscillations

28.Zero initial condition for a system means ( )
a) input reference signal is zero b) zero stored energy
c) system is at rest and no energy is stored in any of its components d) All the above

29.Transfer function of a system is used to calculate which of the following ? ( )
a) The order of the system b) The time constant
c) The output for any given input d) The steady state gain

30.The band width, in a feedback amplifier. ( )
a) remains unaffected
b) decreases by the same amount as the gain increase
c) increases by the same amount as the gain decrease
d) decreases by the same amount as the gain decrease

31.On which of the following factors does the sensitivity of a closed loop system to gain changes and load disturbances depend ? ( )
a) Frequency b) Loop gain c) Forward gain d) All of the above

32.the transient response with feedback system ( )
a) Rises quickly b) Rises slowly c) Decays quickly d) Decays slowly

33.Which of the following statements is correct for a system with gain margin close to unity or a phase margin close to zero ? ( )
a) The system is relatively stable b) The system is highly stable
c) The system is highly oscillatory d) none of the above

34. The motion of the mechanical element can be described as ( )
a) purely rotational b) purely translational c) rotational and translational d) a or b

35. Translational Motion is the motion ( )
a) a longer straight line b) about fixed axis's c) along a random path d) none

36. Rotational motion is the motion ( )
a) a longer straight line b) about fixed axis c) along a random path d) none

37. An element that stores the kinetic energy of translational motion is called ( )
a) Mass b) Spring c) Damper d) None

38 .The force of sliding friction between dry surfaces is called ( )
a) Coulomb friction b)Viscous friction c) stiction d)None

39. Friction force acts in the direction ( )
a) Opposite to that of motion b) Perpendicular to that motion
c) Along that of the motion d)none

40. Which of the following combination is correct electrical analogous element in force-current analogy? ( )
a) force-current b) mass-R c) K-C d) B-L

41. Which of the following combination is correct electrical analogous element in force-voltage analogy? ( )
a) force-current b) mass-R c) K-1/C d) B-L

42. Signal flow graph can be used to represent ( )
a) linear systems b) non linear systems c) both a &b d) none

43-The equation based on the signal flow graph is drawn must be ( )
a) differential equation
b) algebraic equations
c) algebraic equations in the form of cause and effect relations
d) differential equations in the form of cause and effect relations

44 .A node which have only outgoing signals is called ( )
a) input node b) output node c) mixed node d)none

45.A node which have only incoming signals is called ( )
a) input node b) output node c) mixed node d) none

46-A node which have both incoming and outgoing signals is called ( )
a) input node b) output node c) mixed node d) none-

47.Three blocks connected in cascade with gains 5,8,4,then the total gain is ( )
a)17 b) 160 c) 44 d) 37

48.Three blocks connected in parallel with gains 4,6,8,then the total gain is ( )
a)18 b) 196 c) 32 d) 52

49.A given system can be represented by ( )
a) Only one signal flow graph
b) Only two signal flow graph
c) Many different signal flow graph
d) None

50.A given block diagram can be represent ( )
a) Only one system b) 2 or 3 systems c) Many Systems d) None

51.Knowledge of transfer function of a system is necessary for the caluculation of ( )
a) Time constant b) Output for given input c) Order of the system d) None

52.Zero initial condition means that the system is ( )
a) Working with zero initial conditions
b) Working with zero reference signal
c) At rest and no energy is stored in the components
d) None

53. The transfer function is defined for ( )
a) Linear time invariant b) Linear time variant c) Non liner systems d) None

54. The transfer function is the ratio ( )
a) Output to input
b) The Laplace transformation of output to that of Laplace transformation of input
c) The Laplace transformation of input to that of Laplace transformation of output
d) Inverse of the Laplace transformation of output to that of Laplace transformation of input

55. With feedback, the transient response of the system is as compared to that without feedback
a) Decays slowly b) Rises at fast rate c) Rises at slower rate d) None ( )

56-The error signal in control system is ( )
a) The Difference between measured value to set value b) The Sum of measured value to set value c) Ratio between measured value to set value d) None

57-The unit impulse signal has the zero value everywhere except at t=0, where its magnitude is
a) Unity b) Small finite value c) Infinity d) None ( )

58. The area under a unit impulse function is ( )
a) Infinity b) Zero c) Unity d) None

59. The nature of transient response of a system depends on the-A ( )
a) Only on the system poles b) Only on inputs applied
c) A&B d) None

60. The Laplace transformation of impulse function is ( )
a) Zero b) One c) 1/s d) None

61. The system impulse sometimes referred as to as the ( )
a) Weighing function of the system b) Transfer function of the system
c) Transient Response of the System d) Steady state response of the system

62-The impulse response of the system is ( )
a) The inverse Laplace transform of its transfer function
b) The inverse Laplace transform of G(s)
c) The inverse Laplace transform of G(s) H(s) d) None

63. The large time constant corresponds of a ( )
a) Sluggish system b) Faster system c) Over damped system d) Under damped system

64. The steady state error of first order system to a ramp input is equal to ( )
a) The time constant of the system b) Zero c) Infinity d) None

65. Control systems are normally designed with damping factor ( )
a) $\zeta=0$ b) $\zeta=1$ c) $\zeta>1$ d) $\zeta<1$

66.For a stable second order under damped system, the poles are ( )
a) Purely imaginary b) Complex conjugate of each other
c) Real and equal d) Real and unequal

67. For a stable second order over damped system, the poles are ( )
a) Purely imaginary b) Complex conjugate of each other
c) Real and Equal d) Real and unequal

68. For a stable second order un-damped system, the poles are ( )
a) Purely imaginary b) Complex conjugate of each other
c) Real and equal d) Real and unequal

69. For a stable second order critically-damped system, the poles are ( )
a) Purely imaginary b) Complex conjugate of each other
c) Real and equal d) Real and unequal

70. For undamped system the damping ratio is ( )

a) $\zeta=0$ b) $\zeta=1$ c) $\zeta>1$ d) $\zeta<1$

71. For over damped system the damping ratio is ( )
a) $\zeta=\infty$ b) $\zeta=0$ c) $\zeta>1$ d) $\zeta=1$

72. For underdamped system the damping ratio is ( )
a) $\zeta=0$ b) $\zeta<1$ c) $\zeta<0$ d) $\zeta=1$

73. For critically damped system the damping ratio is ( )
a) $\zeta=0$ b) $\zeta<1$ c) $\zeta<0$ d) $\zeta=1$

74. For a second –order system as ζ is increased from zero, the response becomes ( )
a) Progressively more oscillatory b) Progressively less oscillatory
c) Zero d) Infinity

75. If the characteristic equation of the system is $s^2+2s+1=0$, the system is ( )
a) Undamped b) Overdamped
c) Critically damped d) Underdamped

76. If the characteristic equation of a system is $s^2+4s+10=0$, the system is ( )
a) Undamped b) Overdamped
c) Critically damped d) under damped

77. If the characteristic equation of a system is $s^2+6s+8=0$, the system is ( )
a) Undamped b) Underdamped
c) Critically damped d) Over damped

78. If the characteristic equation of a system is $s^2+2=0$, the system is ( )
a) Undamped b) Under damped
c) Critically damped d) Over damped

79. The response of the control system having damping factor as unity will be ( )
a) Oscillatory b) Underdamped
c) Critically Damped d) None of These

80. The rise time of a second order underdamped system is the time taken by the output to rise
a) From 10% To 90% of Its Final Steady State Value
b) From 0% To 100% of Its Final Steady State Value
c) From 5% To 95% of Its Final Steady State Value
d) From 0% To 50% of Its Final Steady State Value ( )

81. The rise time is the time taken by the output to rise from 10% to 90% of its final steady state value, in case of ( )
a) Undamped systems b) Underdamped systems
c) Over damped systems d) critically damped systems

82. In general, which of the following systems is preferred ( )
a) Overdamped b) Critically-damped
c) Undamped d) Underdamped

83. The settling time of the second order linear system is ( )
a) 4 times the time constant of the system b) 2 times the time constant of the system
c) 1/4 times the time constant of the system d) none of these

84. A system is critically damped. If the gain of the system is increased, the system will behave as ( )
a) Undamped b) Under damped c) Over damped d) No effect of gain

85. The steady state response of a system is dependent ( )
a) only on system poles b) only on the inputs applied
c) Both on the system poles and the inputs applied d) none of these

86. The type of a system indicates the number of integrations in the ( )
a) Open Loop transfer function b) Forward path transfer function-
c) Closed Loop transfer function d) None of these

87. As type of system is increased ( )
a) More errors are eliminated b) More errors are introduced
c) There is no effect on errors d) none of these

88. As type of system is increased ( )
a) Stabilization becomes more difficult b) Stabilization becomes very easy
c) There is no effect on stability d) None of these

89. The roots of the characteristic equation are the same as the poles of the ( )
a) Closed Loop transfer function b) Open Loop transfer function
c) Forward path transfer function d) None of these

90. The effect of increase in the forward path gain of a control system on the damping ratio is that the damping ratio is ( )
a) Increased b) Reduced
c) Not effected d) Made zero

91. Due to an increase in the forward path gain of a control system, the steady state error is ( )
a) Reduced b) Increased
c) Not effected d) Made infinity

92. Due to an increase in the forward path gain of a control system, the maximum overshoot is ( )
a) Reduced b) Increased
c) Not effected d) Eliminated

93. Due to derivative control, the steady state error is ( )

a) Reduced
b) Increased
c) Not effected
d) Made zero

94. Due to derivative control, the rise time is ( )
a) Reduced
b) Increased
c) Not effected
d) Made zero

95. Due to integral control, the order of a control system is ( )
a) Increased
c) Not effected
b) Decreased
d) None of these

96. In a type-1,second-order system ,the first undershoot occurs at a time ( )
a) $T_p=\pi/\omega_d$
c) $T_p=\pi/2\ \omega_d$
b) $T_p=2\pi/\ \omega_d$
d) $T_p= \omega_d\ /\ 2\pi$

97. The steady –state error of type-1,second order system to a unit –ramp input is ( )
a) $2\zeta\ \omega_n$
c) $2\zeta/\ \omega_n$
b) $\omega_n/2\zeta$
d) $2\omega_n/\zeta$

98. The position error constant of a type -2 canonical feedback system is given by ( )
a) $\lim_{s\to 0} G(s)$
b) $\lim_{s\to 0} sG(s)$
c) $\lim_{s\to \infty} sG(s)$
d) None

99. The velocity error constant of a type -2 canonical feedback system is given by ( )
a) $\lim_{s\to 0} G(s)$
b) $\lim_{s\to 0} sG(s)$
c) $\lim_{s\to 0} s^2G(s)$
d) None

100. The acceleration error constant of a type -2 canonical feedback system is given by ( )
a) $\lim_{s\to 0} G(s)$
b) $\lim_{s\to 0} sG(s)$
c) $\lim_{s\to 0} s^2G(s)$
d) None

101. If the system has non- repeated poles on the jω axis ,the system is ( )
a) Stable
c) Marginally stable
b) Unstable
d) Conditionally stable

102. If the system has multiple poles on the jω axis ,the system is ( )
a) Stable
c) Marginally stable
b) Unstable
d) Conditionally stable

103.If the system has G(s)=1/s(1+4s),the system is ( )
a) Stable b) Unstable c) Marginally stable d) Conditionally stable

104. Integrators are ( )
a) Stable c) Marginally stable
b) Unstable d) Conditionally stable

105. Sinusoidal oscillators are ( )
a) Stable c) Marginally stable
b) Unstable d) Conditionally stable

106. When the system is exited by an unbounded input and produces an unbounded output ( )
a) The system is stable b) The system is unstable
c) The system is conditionally stable
d) None

107. Marginally stable system have some roots with real part equal to zero ,but none with ( )
a) Positive real parts c) Zero real part
b) Negative real parts d) None

108. If all the roots of the characteristic equation have negative real part, then the system is ( )
a) Stable c) Conditionally stable
b) Unstable d) Marginally stable

109. The Routh stability criterion for testing the stability of the system is ( )
a) An algebraic method c) Both a and b
b) A graphical method d) None

110.
For the application of Routh's test, all the coefficients of the characteristic equation must be ( )
a) Real
b) Imaginary
c) Complex
d) None

111. The number of sign changes in the elements of the first column of Routh's array denotes ( )
a) The number of zeros of the closed loop system in the RHP
b) The number of poles of the closed loop system in the RHP
c) The number of zeros of the open loop system in the RHP
d) The number of poles of the open loop system in the RHP

112.
In the formulation of the routh array, when ever difficulty 1 or difficulty 2 arises, it can be concluded that the system is ( )
a) Stable
b) Unstable
c) Marginally stable
d) Conditionally stable

113. $G(s) = e^{-2s}/s(s+4)$.the system with this transfer function is operated in closed loop with unity feedback. The closed loop system is ( )

a) Stable c) Marginally stable

b) Unstable d) Conditionally stable

114. The closed loop transfer function is $T(s) = (s-2)/(s+1)(s+3)(s+4)$.The system is ( )

a) Stable c) Marginally stable

b) Unstable d) Conditionally stable

115. The closed loop transfer function is $T(s)=K(s+1)/(1+s+2s^2-3s^3+s^4)$ .The system is ( )

a) Stable b) Unstable c) Marginally stable d) Conditionally stable

116. The terms in the first column of the routh array of the characteristic equation of certain system are 2,1,8,-7,2,6.the number of roots of the characteristic equation in the right half of the s-plane is equal to ( )

a) 2 c) 1

b) 3 d) none

117. The terms in the first column of the routh array of the characteristic equation of certain system are 5,7,4,3,-2.the number of roots of the characteristic equation in the right half of the s-plane is equal to ( )

a) 2

b) 1

c) 3

d) none

118. The terms in the first column of the routh array of the characteristic equation of certain system are 4,7,6,-5,-3.the number of roots of the characteristic equation in the right half of the s-plane is equal to ( )

a) 2-

b) 1-

c) 3-

d) none-

119. The open loop transfer function of closed loop system is $G(s)=K/s(s+2)(s+4)$.the range of K for stable operation is ( )

a) $0<K<48$

b) $0<K<24$-

c) $0<K<36$-

d) None-

120. The characteristic equation of unity feedback system is given by $s^3+s^2+2s+2=0$. ( )

a) The system has one pole in the RH of s-plane

b) The system has two poles in the RH of s-plane

c) The system is asymptotically stable

d) The system exhibits oscillatory response

121. A closed loop transfer function of control system is given by G(s)=K(s+8)/S(s+4)(s+2),the smallest value of a for which the system is stable in closed loop for all positive values of K is ( )

a) 0 c) 8

b) 4 d) 12

122. The open loop transfer function of unity feedback control system is given by G(s)=K(s+4)/(s+2)(-6).For K>4,the stability characteristics of open loop and closed loop configuration of the system are respectively ( )

a) Stable and stable c) Stable and unstable

b) Unstable and stable d) Unstable and unstable

123. The characteristic equation 1+G(s)H(s)=0 of a system is given by s4+8s3+12s2+8s+K=0, for the system to remain stable ,the values of K should be ( )

a) Zero

b) 0<K<11

c) >11

d) Positive

124. The open loop transfer function of unity feedback control system is given by G(s)H(s)=22.5/ s(s+2)(s+T).where T is variable parameter.The closed loop system will be stable for all values of

a) T>0 c) T>2.5 ( )

b) 0<T<0.25 d) 2.5<T<5

125. The open loop transfer function of unity feedback control system is given by G(s) =5(s+1)/ s^2(s+2) .the stability characteristics of the open loop and closed loop configuration are ( )

a) Stable and stable

b) Unstable and stable

c) Stable and unstable

d) Unstable and unstable

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

IV Semester I Mid Question Bank 2019-20

Subjective Question Bank

Subject: DC MACHINES AND TRANSFORMERS **Branch: EEE**

Name of the faculty: Mrs.K.Chetaswi

Q. No.	Question	Bloom's Taxonomy Level	CO
	Module-I		
1	Explain doubly excited system with neat circuit.	Understanding	CO1
	OR		
2	Explain single excited system with force and energy equations	Understanding	CO1
3	Explain the concept of magnetic circuit under ac supply and dc supply	Understanding	CO1
	OR		
4	Illustrate general expression for torque in the electromechanical systems.	Understanding	CO1
5	Explain about rotating magnetic field in the electrical machines.	Understanding	CO1
	OR		
6	Explain the concept of MMF in Distributed windings	Understanding	CO1
7	The total core losses of a specimen of silicon steel is found to be1500W at 50HZ. Keeping the flux density constant the loss becomes 3000W when the frequency is raised to 75HZ .Determine separately the hysteresis loss and eddy current loss at each of those frequencies.	Evaluating	CO1
	OR		
8	Two coupled coils have self and mutual inducattnces as expressed below L_{11}=1+ 1/x; L_{22} = 0.5 + 1/x; L_{12} = L_{21} = 1/x these are valid or certain range of displacement x, in Cm. The first coil is excited by a constant current of 20A and the second one by a constant current of -10A. Determine a) the mechanical workdone if x chanes from 0.5 to 1Cm b) Energy supplied by the two electrical sources in a) above	Evaluating	CO1
	Module II		
1.	Explain armature reaction effect with neat waveforms.	Understanding	CO2
	OR		
2	Explain the methods of improving Comutation	Understanding	CO2
3	Explain about critical speed and critical resistance from O.C.C	Understanding	CO2
	OR		
4	A 4 pole long shunt lap wound generator supplies 25KW at a terminal voltae of 500V the armature resistance is 0.03Ohm. series field resistance o 0.04Ohm and shunt ield resistance of 200Ohm the brush drop ma taken as 1 volt.Determine the emf generated also determine the number of	Evaluating	CO2

	condctors if the speed is 1200rpm and lux per pole is 0.02Wb. nelect armature reaction.		
5.	A short shunt DC compound generator supplies a load current of 280A at 100V. The armature, series and shunt field resistances are 0.02,0.05 and 50 ohm respectively. Determine the value of generated emf.	Evaluating	CO2
	OR		
6	An 8 pole lap wound DC generator has 120 slot, having 4 conductor per slot. If each conductor carry 2A and if flux per pole is 0.04wb Determine the speed of the generator for giving 240V an open circuit. Also find the rated output of the machine if the rated output voltage is 220V.	Evaluating	CO2
7	A 4-pole DC enerator runs at 750rpm and generates an emf of 240V. The armature is wave wound and has 792 conductors if the total flux from each pole is 0.045Wb. Determine the leakagge coefficient	Evaluating	CO2
	OR		
8	a) Explain the emf equation of the DC generator b) Explain the voltage proile in DC shunt generator and the reasons for the failure of self excitation.	Understanding	CO2
	MODULE III		
1	Explain the principle of working of DC Motor	Understanding	CO3
	OR		
2	Explain the sinificance of Back emf in DC Motor	Understanding	CO3
3	Develop the expression or armature torque in a DC Motor.	Appling	CO3
	OR		
4	A DC motor takes an armature current of 110A at 480V. The armature circuit resistance is 0.2Ohm the machine has 6-poles and the armature is lap connected with 864 conductors.the flux per pole is 0.05Wb.determine the speed and gross torque developed by the armature.	Evaluating	CO3

Signature of the Faculty **Signature of the HOD**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

IV Semester I Mid Question Bank 2019-20

Subject: DC MACHINES AND TRANSFORMERS **Branch:**

EEE

Name of the Faculty: MrsK.Chetaswi

OBJECTIVE QUESTIONS

1 What is the magneto motive force (mmf) of a wire with 8 turns carrying three amperes of current? [ ]

a 2400 AT
b 24AT
c 2.4AT
d 240 AT

2 A coil of wire is placed in a changing magnetic field. If the number of turns in the coil is decreased, the voltage induced across the coil will [ ]

a Increase
b Decrease
c Remain constant
d Be excessive

3 When the north poles of two bar magnets are brought close together, there will be [ ]

a A downward force
b A force of attraction
c No force
d A force of repulsion

4 What is the magnetomotive force in a 75-turn coil of wire when there are 4 A of current through it? [ ]

a 18.75 AT
b 300AT
c 30AT
d 187 AT

5 The induced voltage across a stationary conductor in a stationary magnetic field is [ ]

a Reversed in Polarity
b zero
c Increased
d Decreased

6 An electromagnetic field exists only when there is [ ]

a An increasing current
b Decreased
c Current
d Voltage

7 When the current through the coil of an electromagnet reverses, the [ ]

a Direction of the magnetic field reverses
b Direction of the magnetic field unchanged
c Magnetic field expands
d Magnetic field collaps

8 The ability of a material to remain magnetized after removal of the magnetizing force is known as [ ]

a Permeability
b Reluctance
c Hysteresis
d Retentivity

9 A basic one-loop dc generator is rotated at 90 rev/s. How many times each second does the dc output voltage peak (reach maximum)? [ ]

a 360
b 270
c 90
d 180

10 For a given wirewound core, an increase in current through the coil [ ]

a Increase the flux density
b Causes no change in flux density
c Decreases the flux density
d Increases the flux density

11 The induced voltage across a coil with 250 turns that is located in a magnetic field that is changing at a rate of 8 Wb/s is [ ]

a 1000V
b 2000V
c 31.25V
d 3125 V

12 When the speed at which a conductor is moved through a magnetic field is increased, the induced voltage [ ]

a Decreases
b Remains constant
c Reaches zero
d Increases

13 If the cross-sectional area of a magnetic field increases, but the flux remains the same, the flux density [ ]

a Decreases
b Increases
c Doubles
d Remains same

14 The unit for permeability is [ ]

a AT/M
b Wb/AT-m
c AT/Wb
d Wb

15 The unit for reluctance is [ ]

a AT/M
b Tesla
c Wb
d AT/Wb

16 When a solenoid is activated, the force that moves the plunger is [ ]

a Varying voltage
b An electromagnetic field
c A permanent magnetic field
d A steady current

17 If the steel disk in a crankshaft position sensor has stopped with the tab in the magnet's air gap, the induced voltage [ ]

a Decreases
b Increases
c Is zero
d Will remain constant

18 The direction of a magnetic field within a magnet is [ ]

a From south to north
b From north to south
c Back to front
d Front to back

19 What is the reluctance of a material that has a length of 0.07 m, a cross-sectional area of 0.014 m2, and a permeability of 4,500 Wb/At × m? [ ]

a 0.001111 At/Wb
b 1 At/Wb
c 111 At/Wb
d 11 At/Wb

20. If a loop in a basic dc generator suddenly begins rotating at a faster speed, the induced voltage [ ]

a Increase
b Decrease
c Remains unchanged
d Reverses polarity

21 How much flux is there in a magnetic field when its flux density is 5000 mu.gifT and its cross-sectional area is 300 mm^2? [ ]

a 3mWb
b 5 micro Wb
c 16.67 Wb
d 1.5 micro Wb

22 The motional e.m.f. induced in a coil is independent of [ ]

a Time
b Resistance
c Number of turns
d Change of flux

23 What are the effects of moving a closed wire loop through a magnetic field? [ ]

a Voltage is induced in the wire
b Current is induced in the wire
c Polarity across the wire depends on the direction of motion
d All the above

24 The component that produces power in an electromagnetic generator is called the [ ]

a Commutator
b Field winding
c Armature
d Brush

25 The Hall effect [ ]

a is a phenomenon with no practical applications
b is used in various sensor applications
c can develop potentials of thousands of volts
d is the basis for solar cell operation

26 Which electromagnetic device contains an armature? [ ]

a A speaker
b A relay
c A dc generator
d A solenoid

27 The direction of induced current is given by? [ ]

a Faraday's law
b Ampere's law
c Snell's Law
d Lenz's law

28 What is the reluctance of a material that has a length of 0.045 m, a cross-sectional area of 0.015 m^2 , and a permeability of 2500 μWb/At·m? [ ]

a 1200 AT/Wb
b 833.33 micro AT/Wb
c 0.27 AT/Wb
d More information is needed in order to find the reluctance

29 Permeability is the inverse equivalent of which electrical term? [ ]

a Voltage
b Resistance
c Current
d A relay

30 Which electromagnetic device has a movable iron core called a plunger? [ ]

a A DC generator
b A speaker
c A solenoid
d A relay

31 If positively charged particles enter with high velocity from the sky towards the earth, then the earths magnetic field will deflect them towards [ ]

a South
b North
c West
d East

32 Which electromagnetic device uses brushes and a commutator? [ ]

a A solenoid
b A dc generator
c A speaker
d A realy

33 What do you call the characteristic of a magnetic material whereby a change in magnetization lags the application of a magnetizing force? [ ]

a Induction
b Hysterisis
c Retentivity
d Reluctance

34 The energy resides in a current carrying conductor in the form of [ ]

a Thermal vibration
b Electrostatic field
c Magnetic field
d Both electrostatic and thermal vibration

35 "Series" and "parallel" as applied to dc motors refer to [ ]

a the connection of the field coil and armature windings
b the connection of the motor and controller
c the connection of the motor batteries
d the connection of the brush and commutator

36 A Hall effect sensor [ ]

a can operate only a few times before failure
b is a noncontacting magnetic sensor
c exists only in theory
d produces very large voltages

37 What is the magnetomotive force in a 150-turn coil of wire with 2 A flowing through it? [ ]

a 13.33
b 152
c 300
d 75

38 The unit of flux density is known as [ ]

a Mmf
b Tesla
c Maxwell
d Weber

39 What is the flux density of a magnetic field whose flux is 3000 μWb and cross-sectional area is 0.25 m^2? [ ]

a 83330 T
b More information is needed in order to find flux density.
c 12000 micro Tesla
d 0 T

40 Which electromagnetic device has a flexible cone? [ ]

a A solenoid
b A DC gnenerator
c A speaker
d A relay

41 The force of repulsion b/w two magnetic poles depends upon: [ ]

a The strength of two poles
b Nature of the medium separating them
c Distance between two poles
d All the above

42 If magnet is broken into two equal pieces the pole strength of each half will be: [ ]

a Same
b Double
c Half
d One fourth

43 Which one of the following is considered to be the best method for making a magnet? [ ]

a Double touch
b Electrolytic
c Induction
d Single touch

44. When an iron piece is magnetised its length: [ ]

a Increases
b Decreases
c Increases slightly
d Decreases slighty

45. Substances, which are strongly attracted by a magnet and can also be magnetised, are called: [ ]

a Ferromagnetic

b Diamagnetic
c Papramagnetic
d All the above

46 Who first advanced the molecular theory of magnetism? [ ]
a Weber
b Ampere
c Morse
d Faraday

47 It is learnt that all magnetic substances lose their magnetism when: [ ]
a Heated
b Brought near a magnetic field
c Placed in water
d In winter

48 Which of the following is magnetic material: [ ]
a Cobalt
b Nickel
c Iron
d All the above

49 Substances, which are repelled by a magnet, are known as: [ ]
a Ferromagnetic
b Paramagnetic
c Diamagnetic
d None of the above

50 The attractive power. of a bar magnet is maximum. at [ ]
a Throughout magnet
b Middle
c Ends
d None of the above

51 The following magnet is used in large machines to create magnetic flux [ ]
a Permanent magnet
b Electro magnet
c Temporary magnet
d any of the above

52 The special device which converts AC into DC and vice versa is known as [ ]
a armature
b slip rings
c split rings
d feild magnets

53 The following is (are) the part(s) of a field magnet. [ ]
a yoke
b pole cores
c pole shoes
d all of the above

54 Function of _____ is to collect current from the commutator and supply it to the external load. [ ]
a feid magnet
b armature
c brushes
d yoke

55 The brushes are ____ in shape. [ ]
a triangular
b rectangular
c cylindrical
d square

56 For larger machines [ ]
a Ball bearings are used at both driving and non driving ends.
b Ball bearings are used at driving end and roller bearings are used at non driving end.
c Roller bearings are used at driving end and ball bearings are used at non driving end.
d Roller bearings are used at both driving and non driving ends.

57 The following is (are) keyed to the shaft [ ]
a Armature core
b commutator
c Cooling fan
d All of the above

58 Which of the following generators have two field windings? [ ]
a Series wound generator
b Shunt wound generator
c Compound wound generator
d All of the above

59 A motor converts [ ]
a Mechanical energy into electrical energy
b Chemical energy into electrical energy
c Electrical energy into Mechanical energy
d Electrical energy into chemical energy

60 To produce dynamically induced emf, the following is (are) necessary [ ]
a A magnetic field
b A conductor
c Motion of conductor with respect to the field
d All of the above

61 Which of the following is also called 'motor rule'? [ ]
a Flemings right hand rule
b Flemings left hand rule
c Flemings right & left hand rule
d All of the above

62 Shaft torque equals to [ ]
a Net torque
b Friction torque
c Net torque + Friction torque + Torque lost
d Net torque -(Friction torque + Torque lost)

63 Iron or magnetic losses are also called [ ]
a Core losses
b Field losses
c Copper losses
d Armature losses

64 The mechanical losses are about _____ % of full load loss [ ]
a 0 to 10
b 10 to 20
c 20 to 30
d 30 to 40

65 The material for commutator brushes is generally [ ]
a Mica
b copper
c Cast iron
d carbon

66 The insulating material used between the commutator segments is normally [ ]
a Graphite
b Paper
c Mica
d Insulating varnish

67 In dc generators the brushes on commutator remain in contact with conductors which [ ]
a Lie under south pole
b Lie under north pole
c Lie under interpolar region
d Are farthest from poles

68 If brushes of a d.c generator are moved in order to bring these brushes in magnetic neutral axis there will be [ ]
a Demagnetization only

b Cross magnetization ass well as magnetization
c Cross magnetization as well as demagnetizing
d Cross magnetization only

69 Armature reaction of an unsaturated d.c machine is [ ]
a Cross magnetizing
b Demagnetizing
c Magnetizing
d None of the above

70. D.c generators are conncted to the busbars or disconnected from them only under the floating condition [ ]
a To avoid sudden loading of the primemover
b To avoid mechanical jerk to the shaft
c To avoid burning of switch contacts
d All the above

71 Iron losses in a d.c machine are independent of variations in [ ]
a Speed
b Load
c Voltage
d Speed and voltage

72 In d.c generators current to the external circuit from armature is given through [ ]
a Commutator
b Solid connection
c Slip rings
d None of the above

73 Brushes of d.c machines are made of [ ]
a Carbon
b Soft copper
c Hard copper
d All of above

74 If B is the flux density l is the kength of conductor and v the velocity of conductor then induced e.m.f is givenby [ ]
a Blv
b Blv2
c Bl2v
d Bl2v2

75 In case of a 4-pole DC generator provided with a two layer lap winding with 16 coils the pole pitch will be [ ]
a 4
b 8
c 16
d 32

76 For a DC generator when the number of poles and the number of armature conductors is fixed then which winding will give higher emf? [ ]
a Lap
b Wave
c Either A or B
d Depends on other feathers of design

77 In a Four pole DC machine [ ]
a All the four poles are north poles
b Alternate poles are north and south
c All the poles are south
d Two north poles follow two south poles

78 Copper brushes in DC machines are used [ ]
a When low voltage and high currents are involved
b Where high voltage and small currents are involved
c In both of the above cases
d None of the case

79 A separately excited generator as compared to a self excited generator [ ]
a Is available to better voltage control
b Is more stable
c Has exciting current independent of load current

d All the above

80 In case of DC machines mechanical losses are primary function of [ ]
a Current
b Voltage
c Speed
d None

81 Fleming's right hand rule regarding direction of induced emf correlates [ ]
a Magnetic flux direction of current flow and resultant force
b Magnetic flux direction of motion and the direction of emf induced
c Magnetic field strength induced voltage and current
d None

82 While applying fleming's right hand rule to and the direction of induced emf the thumb points towards [ ]
a Induced emf
b Flux
c Motion of the conductor if forefinger points in the direction of generated emf
d Motion of the conductor if forefinger points along the lines of flux

83 The bearings use to support the rotor shaft are generally [ ]
a Ball bearings
b Bush bearings
c Magnetic bearings
d None

84 In DC generators the cause of rapid brush wear may be [ ]
a Severe sparking
b Rough commutator surface
c In perfect contact
d Any of the above

85 In Lap winding the number of brushes is always [ ]
a Double the poles
b Same as poles
c Half the poles
d Two

86 Laminations of core are generally made of [ ]
a Case iron
b Carbon
c Silicon steel
d Stainless steel

87 Which of the following could be lamina-proximately the thickness of laminations of a D.C. machine ? [ ]
a 0.005M
b 0.05M
c 0.5M
d 5M

88 The armature of D.C. generator is laminated to [ ]
a Reduce the bluk
b Provide the bulk
c Insulate the core
d Reduce eddy current losses

89 The resistance of armature winding depends on [ ]
a Length of the conductor
b cross-sectional area of the conductor
c Number of conductors
d All the above

90 The field coils of D.C. generator are usually made of [ ]
a MICA
b Copper
c Cast iron
d carbon

91 The commutator segments are connected to the armature conductors by means of [ ]
a Copper lugs

b Resistance wires
c Insulation pads
d none

92 In a commutator [ ]
a Copper is harder than mica
b Mica and copper are equally hard
c Mica is harder than coper
d None

93 In D.C. generators the pole shoes are fastened to the pole core by [ ]
a Rivets
b Counter sunk screws
c Brazing
d None

94. According to Fleming's right-hand rule for finding the direction of induced e.m.f., when middle finger points in the direction of induced e.m.f., forefinger will point in the direction of [ ]
a Motion of conductor
b Lines of force
c Either of the above
d None

95. In a D.C. generator the ripples in the direct e.m.f. generated are reduced by [ ]
a using conductor of annealed copper
b using commutator with large number of segments
c using carbon brushes of superior quality
d using equiliser rings

96 Two generators A and B have 6-poles each. Generator A has wave wound armature while generator B has lap wound armature. The ratio of the induced e.m.f. is generator A and B will be [ ]
a 2:3
b 3:1
c 1:2
d 1:3

97 The e.m.f. generated by a shunt wound D.C. generator isE. Now while pole flux remains constant, if the speed of the generator is doubled, the e.m.f. generated will be [ ]
a E/2
b 2E
c Zero
d E

98 The armature core of a D.C. generator is usually made of [ ]
a Silicon steel
b Copper
c Cast iron
d None

99 Satisfactory commutation of D.C. machines requires [ ]
a brushes should be of proper grade and size
b brushes should smoothly run in the holders
c smooth, concentric commutator properly undercut
d All the above

100 Open circuited armature coil of a D.C. machine is [ ]
a identified by the scarring of the commutator segment to which open circuited coil is connected
b indicated by a spark completely around the commutator
c Both a and b
d none

101 What is the example of singly excited magnetic field system. [ ]
a Relay
b D.C. shunt motor
c D.C. series motor
d Synchronous motor

102 For iron the curve between flux linkages () and current (i) is_____ [ ]
a Linear
b Non linear

c Circle
d Semi circle

103 When electric field is used as a medium for electromechanical energy conversion, the force [ ]
a Zero
b Very small
c Large
d Very large

104 The nature of armature winding of a d.c. machine is decided by [ ]
a Front pitch
b Back pitch
c Commutator pitch
d Pole pitch

105 An 8-pole duplex winding will have_____ parallel paths [ ]
a 8
b 4
c 32
d 16

106 The greatest percentage of heat loss in a d.c. machine is due to____ [ ]
a Eddy current loss
b Hysterisis
c Frictional
d copper

107 Due to armature reaction in a d.c. generator, the flux under leading pole tip____ [ ]
a Is decreased
b Is increased
c May decrease or increase
d Remains unchanged

108 . Flux distribution due to armature reaction causes the M.N.A. in a generator to [ ]
a Remain stationary
b Move in the direction of rotation
c move opposite to the direction of rotation
d moves by 45^0 in opposite direction

109 The field winding of a d.c.shunt machine usually carries____ __of the rated current if the machine [ ]
a 2% to 5%
b 15% to 20%
c more than 20%
d less than 0.5%

110 D.C. machines which are subjected to abrupt changes of load are provided with [ ]

a Inter pole windings
b Compensating windings
c equalizers
d copper brushers

111 No load speed of which of the following motor will be highest? [ ]
a Shunt motor
b Series motor
c Cumulative compound motor
d Differentiate compound motor

112 The direction of rotation of a dc series can be changed by [ ]
a Interchanging supply terminals
b Interchanging field terminals
c a and b above
d None of the above

113 Which of the following application requires high starting torque [ ]
a Lathe machines
b Centrifugal pump
c Locomotive
d Air blower

114 If a d.c motor is to be selected for conveyors ,which rriotor would be preferred? [ ]
a Series motor
b Shunt motor
c Differentially compound motor
d Cumulative compound motor

115 Which d.c motor will be perferred for machine tools ? [ ]
a Series motor
b Shunt motor
c Cumulative compound motor
d Differentially compound motor

116 Which d.c motor is preferred for elevators ? [ ]
a Series motor
b Shunt motor
c Cumulative compound motor
d Differentially compound motor

117 The speed of a D.C. shunt motor is required to be more than full load speed. This is possible by [ ]
a reducing the field current
b decreasing the armature current
c increasing the armature current
d increasing the excitation current

118 One D.C. motor drives another D.C. motor. The second D.C. motor when excited and driven [ ]
a runs as a generator
b does not run as a generator
c also runs as a motor comes to stop after sometime
d none

119 Which D.C. motor has got maximum self relieving property ? [ ]
a Series
b Shunt
c compound
d None

120. D.C. motor is to a drive a load which is almost nil for certain part of the load cycle and peak value for short duration. We will select this [ ]
a Series
b Shunt
c Compound
d none

121 D.C. motor is to drive a load which has certain minimum value for most of the time and some peak value for short duration. We will select the [ ]
a Series
b Shunt
c Compound
d None

122 If a D.C. shunt motor is working at full load and if shunt field circuit suddenly opens [ ]
a this will make armature to take heavy current, possibly burning it
b this will result in excessive speed, possibly destroying armature due to excessive centrifugal stresses
c nothing will happen to motor
d motor will come to stop

123 Where D.C. motor of H.P. 12 or more requires frequent starting, stopping, reversing and speed control [ ]
a drum type controller is used
b three point starter is used
c four point starter is used
d all

124 In variable speed motor [ ]
a a stronger commutating field is needed at low speed than at high speed
b a weaker commutating field is needed at low speed than at high speed
c same commutating field is needed at low speed than at high speed
d none

125 Which method of braking is generally used in elevators ? [ ]
a Plugging

b Regenerative braking
c Rheostatic braking
d none

Code: 80H04 **2019-20**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

III B.Tech I Semester I Mid Question Bank (MR 18)

Subject: Engineering Economics & Accountancy **Branch: EEE,ECE,IT**

Name of the Faculty:K. Dhanalakshmi, Abhinav Swaroop

Instructions:

1. **All the questions carry equal marks.**

2. Solve all the questions.

MODULE-I			
Q.No	**Questions**	**Blooms taxonomy questions**	**Co**
1.	What do you understand by joint stock company? Explain with merits and demerits.	Understanding	I
	Or		
2.	Examin Explain partnership & Discuss how is Sole trader different from Partnership?	Understanding	I
	Or		
3.	Classify the different forms of business environment & Discuss the factors effecting the business organization.	Analyzing	I
	Or		
4.	Examine the different forms of Public enterprises?	Analyzing	I
	Or		
5.	Identify demand forecasting & Explain the techniques of demand Forecasting?	Applying	I
	Or		
6.	Identify the factors determining demand?	Applying	I
	Or		
7.	Explain Managerial Economics? Explain the Nature and Scope of managerial Economics?	Understanding	I
	Or		
8.	What do you mean by elasticity of demand? How do you measure it?	Understanding	I
MODULE-II			
1.	Explain production function & the production function with one variable graphically.	Understanding	II
	Or		
2.	Explain about the ISO costs and MRTS?	Understanding	II
	Or		
3.	Analyze the COBB-DOUGLAS production function?	Analyzing	II
	Or		

4.	Classify the different types of costs?	Analyzing	II
	Or		
5.	A firm has a fixed cost of Rs 50,000; selling price per unit is Rs 50 and variable cost per unit is Rs25. Present level of production is 3500 units. Determine BEP in terms of volume and also sales value.	Applying	II
	Or		
6.	Construct graphical presentation of BEA. Explain Break-Even Analysis (BEA) and determine it.	Applying	II
	Or		
7.	Explain the types of economies of scale briefly?	Understanding	II
	Or		
8.	What do you understand by the laws of returns with explain briefly.	Understanding	II
MODULE-III			
1.	Compare the features of perfect competition and monopolistic competition?	Understanding	III
	Or		
2.	Explain Perfect Competition and explain how price is determined under perfect competition in short run?	Understanding	III
	Or		
3.	Analyze the Price Output determination in Monopoly?	Analyzing	III
	Or		
4.	Examine the different market structures?	Analyzing	III
	Or		
5.	Write down the features of perfect markets?	Understanding	III
	Or		
6.	Illustrate price determining in case of Monopoly.	Understanding	III

Signature of faculty **Signature of HOD**

Code: 80H04 **MR18**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)
(Affiliated to JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD)
Maisammaguda, Dhulapally, (Post via Kompally), Secunderabad-500 100.

III B.TECH II SEMESTER& II B.TECH II SEMESTER

SUBJECT: ENGINEERING ECONOMICS & ACCOUNTANCY
(BRANCH :Common to CSE,ECE,EEE,ME&IT)
Name of the faculty: K.DHANALAKSHMI,ABHINAVSWAROOP(MBA DEPARTMENT)

---

1. Which of the following is not a factor affecting the choice of a business organization? [ ]
   a) Liability
   b) Agreement
   c) Quick decision making
   d) Flexibility
2. Decision making is faster in [ ]
   a) Joint stock company
   b) Departmental undertaking
   c) Partnership
   d) Sole trader
3. The advantage of sole trader form of business organization___ [ ]
   a) Unlimited liability
   b) Large requirement of capital
   c) More competition
   d) Low rate of taxation
4. Which of the following is not a feature of partnership? [ ]
   a) Relationship
   b) There should be a business
   c) Agreement
   d) No partner can act for other partners
5. The closure of partnership is called_____ [ ]
   a) Resolution
   b) Revolution

c) Solution
d) Dissolution

6. The written agreement among partners is [ ]
   a) Trading deed
   b) Demand draft
   c) Partnership deed
   d) Bill of exchange
7. To start a partnership firm a minimum of _____ and maximum of _____ is required to carry on non-banking business. [ ]
   a) 2 and 10
   b) 7 and unlimited
   c) 2 and 50
   d) 2 and 20
8. Which among the following is not an achievement of public enterprise? [ ]
   a) Generating large employment opportunities
   b) Encouraging the growth of private monopolies
   c) Stimulating diversified growth in private sector
   d) Creating viable infrastructure.
9. The advantage of departmental undertaking is [ ]
   a) Delayed decisions
   b) Incidence of more taxes
   c) Effective control
   d) No incentives to maximum earnings
10. Indian company Act was enacted in [ ]
   a) 1956
   b) 1936
   c) 1947
   d) 1950
11. Which of the following is not a feature of the company [ ]
   a) Transferability of shares
   b) Unlimited liability
   c) Common seal
   d) Winding up
12. The minimum paid up capital in a public company is [ ]
   a) Rs.2 lakhs and higher
   b) Rs.10 lakhs and higher
   c) Rs.24 lakhs and higher
   d) Rs.5 lakhs and higher
13. The Indian partnership Act was enacted in [ ]
   a) 1932
   b) 1942
   c) 1952
   d) 1962
14. A partner who lends his name to the firm without having any real interest is called as [ ]
   a) Ostensible partner
   b) Sleeping partner or dormant partner
   c) Nominal partner
   d) Partner by Estoppels
15. An agreement to share profit implies: [ ]
   a) To share only profits
   b) To share only negative profits
   c) To share both profits and losses
   d) Neither to share profit nor losses
16. The term implied refers to [ ]
   a) Written agreement
   b) Oral agreement
   c) Inferred from the course of dealing
   d) All the above
17. Working partner is also called [ ]

a) Nominal partner
b) Minor partner
c) Sleeping partner
d) Active partner

18. In a partnership firm ,the partners liability is [ ]
a) Limited
b) Medium
c) Unlimited
d) Large

19. According to Law of demand - when price falls of a commodity demand goes on [ ]
a) Decreasing
b) Increasing
c) Remains constant
d) Not related

20. From the following factors which one does not impact on demand [ ]
a) Price
b) Income.
c) Taste of consumers'
d) Weather

21. Demand for petrol [ ]
a) Elastic
b) Inelastic
c) Perfectly elastic
d) Perfectly inelastic

22. When PE <1 (PE=Price elasticity) we call it [ ]
a) Perfectly elastic demand
b) Perfectly inelastic demand
c) Relatively elastic demand
d) Relatively inelastic demand

23. When PE =1 (PE=Price elasticity) we call it [ ]
a) Perfectly elastic demand
b) Perfectly inelastic demand
c) Relatively elastic demand
d) Unit elastic demand

24. When PE =0 (PE=Price elasticity) we call it [ ]
a) Perfectly elastic demand
b) Perfectly inelastic demand
c) Relatively elastic demand
d) Relatively inelastic demand

25. Giffen goods, Veblen goods and speculations are exceptions to___ [ ]
a) Cost function
b) Production function
c) Law of Demand
d) Finance function

26. When PE = infinity(Price Elasticity of Demand is infinite), we call it ___ [ ]
a) Relatively Elastic
b) Perfectly Inelastic
c) Perfectly Elastic
d) Unit Elastic

27. Income Elasticity of demand when less than 'O' (IE = O), it is termed as __ [ ]
a) Income Elasticity less than unity
b) Zero income Elasticity
c) Negative Income Elasticity
d) Unit Income Elasticity

28. The other name of inferior goods is _____ [ ]
a) Veblen goods
b) Necessaries
c) Giffen’s goods
d) Diamonds

29. Estimation of future possible demand is called _____ [ ]
    a) Sales Forecasting
    b) Production Forecasting
    c) Income Forecasting
    d) Demand Forecasting
30. How many major methods are employed to forecast the demand [ ]
    a) Three
    b) Four
    c) Two
    d) Five
31. What is the formula for Price Elasticity of Demand? [ ]
    a) % of change in the Price / % of change in the Demand
    b) % of change in the Demand / % of change in the Income
    c) % of change in the Demand /% of change in the Price
    d) % of change in the Demand of 'X'/% of change in the Price of 'Y'
32. When a small change in price leads great change in the quantity demand, we call it [ ]
    a) Inelastic Demand
    b) Negative Demand
    c) Elastic Demand
    d) None
33. When a great change in price leads small change in the quantity demand, we call it [ ]
    a) Elastic Demand
    b) Positive Demand
    c) Inelastic Demand
    d) None
34. "Coffee and Tea are the _____ goods". [ ]
    a) Relative
    b) Complementary
    c) Substitute
    d) None
35. Consumers Survey method is one of the Survey Methods to forecast the__. [ ]
    a) Sales
    b) Income
    c) Demand
    d) Production
36. What is the formula for Income Elasticity of Demand? [ ]
    a) % of change in the Income / % of change in the Demand
    b) % of change in the Demand / % of change in the Price
    c) % of change in the Demand /% of change in the Income
    d) % of change in the Demand of 'X' /% of change in the Price of 'Y'
37. What is the formula for Cross Elasticity of Demand? [ ]
    a) % of change in the Price of 'X' / % of change in the Demand of X
    b) % of change in the Demand of 'Y" /% of change in the Price Y
    c) % of change in the Demand of 'X' /% of change in the Price of 'Y'
    d) % of change in the Demand X /% of change in the Income Y
38. Which of the following is not a part of Trend projection method? [ ]
    a) Least square method
    b) Moving average method
    c) Test marketing
    d) Exponential smoothing
39. When increase in income of an individual results with negative change in demand of product what do you call this---------- [ ]
    a) Negative income elasticity
    b) Zero income elasticity
    c) Unit income elasticity
    d) Income elasticity greater than unity
40. When increase in income of an individual results with positive change in demand of product what do you call this---------- [ ]
    a) Negative income elasticity

b) Zero income elasticity
c) Unit income elasticity
d) Income elasticity greater than unity

41. When increase in income of an individual results with equal change in demand of product what do you call this---------- [ ]
    a) Negative income elasticity
    b) Zero income elasticity
    c) Unit income elasticity
    d) Income elasticity greater than unity
42. The features of good demand forecasting method is [ ]
    a) Complexity
    b) Economy
    c) Demographics
    d) Unavailability
43. If no change in price brings huge change in demand is called as---------- [ ]
    a) Perfectly elastic
    b) Perfectly inelastic
    c) Relatively elastic
    d) Relatively inelastic
44. Price elasticity is always _____ [ ]
    a) Positive
    b) Negative
    c) Consistent Declining
    d) None
45. Advertising elasticity is always _____ [ ]
    a) Positive
    b) Negative
    c) Consistent Declining
    d) None
46. Unit income elasticity refers to (Ey = income elasticity) [ ]
    a) Ey>0
    b) Ey<0
    c) Ey=0
    d) Ey=1
47. To forecast demand for a particular product or service we use some relevant indicator known as _____ [ ]
    a) Correlation
    b) Simultaneous equation
    c) Barometer
    d) None
48. Census method is also called ---------- method [ ]
    a) Total enumeration
    b) Accountability
    c) Regression
    d) Correlation
49. Sales force opinion survey method includes---------- [ ]
    a) Owners
    b) Marketing Employees
    c) Customers
    d) Outside experts
50. Expert opinion survey method includes---------- [ ]
    a) Owners
    b) Marketing Employees
    c) Customers
    d) Outside experts
51. Production function is also known as [ ]
    a) Output-costs relationship
    b) Input-costs relationship
    c) Input-output relationship

d) Output-input relationship

52. How many stages are there in 'Law of Variable Proportions'? [ ]
    a) Five
    b) Two
    c) Three
    d) Four
53. Long run cost curves are called [ ]
    a) Operating curves
    b) Fixed curves
    c) Variable curves
    d) Planning curves
54. When a firm expands its Size of production by increasing all factors, it secures certain advantages, known as [ ]
    a) Optimum Size
    b) Diseconomies of Scale
    c) Economies of Scale
    d) None
55. When producer secures maximum output with the least cost combination of factors of production, it is known as_____ [ ]
    a) Consumer's Equilibrium
    b) Price Equilibrium
    c) Producer's Equilibrium
    d) Firm's Equilibrium
56. The 'Law of Variable Proportions' is also called as _____. [ ]
    a) Law of fixed proportions
    b) Law of returns to scale
    c) Law of variable proportions
    d) None
57. _____ is a 'group of firms producing the same are slightly different products for the same market or using same raw material'. [ ]
    a) Plant
    b) Firm
    c) Industry
    d) Size
58. When proportionate increase in all inputs results in constant output, then we call [ ]
    a) Increasing Returns to Scale
    b) Decreasing Returns to Scale
    c) Constant Returns to Scale
    d) None
59. When different combinations of inputs yield the same level of output Known as [ ]
    a) Different Quants
    b) Output differentiation
    c) Isoquants
    d) Production differentiation
60. Conversion of inputs in to output is called as _____. [ ]
    a) Sales
    b) Income
    c) Production
    d) Expenditure
61. When Proportionate increase in all inputs results in more than equal Proportionate increase in output, then we call _____. [ ]
    a) Decreasing Returns to Scale
    b) Constant Returns to Scale
    c) Increasing Returns to Scale
    d) None
62. When Proportionate increase in all inputs results in less than Equal Proportionate increase in output, then we call _____. [ ]
    a) Increasing Returns to Scale
    b) Constant Returns to Scale

c) Decreasing Returns to Scale
d) None

63. A curve showing equal amount of outlay with varying Proportions of Two inputs are called [ ]
a) Total Cost Curve
b) Variable Cost Curve
c) Isocost Curve
d) Marginal Cost Curve

64. Which of the following indicated profit? [ ]
a) Contribution+fixed cost
b) Contribution-fixed cost
c) Selling price-variable price
d) None of the above

65. The excess of actual sales revenue over the Break Even sales in known as [ ]
a) P/V ratio
b) Margin of safely
c) Angle of Incidence
d) Contribution

66. Variable costs are known as [ ]
a) Total Cost
b) Prime/Direct
c) Book Cost
d) None

67. Break-even point means where [ ]
a) Total sales revenue is equal to total cost
b) No profit no loss
c) Only a
d) Both a and b

68. If the proportionate increase in output is more than the proportionate increase in input, this situation can be called [ ]
a) Law of decreasing returns to scale
b) Law of Increasing returns to scale
c) Constant Returns to scale
d) None

69. When different combinations of inputs yield the same level of output Known as [ ]
a) Different Quants
b) Output differentiation
c) Isoquants
d) Production differentiation

70. A curve showing equal amount of outlay with varying Proportions of Two inputs are called [ ]
a) Total Cost Curve
b) Variable Cost Curve
c) Isocost Curve
d) Marginal Cost Curve

71. When a firm expands its Size of production by increasing all factors, It secures certain advantages, called ___ [ ]
a) Optimum Size
b) Diseconomies of Scale
c) Economies of Scale
d) None

72. The law of returns is also called _____ [ ]
a) Law of fixed proportion
b) Law of variable proportion
c) Law of constant returns
d) Law of increasing returns

73. Which of the following level of production denotes break-even point? [ ]
a) Minimum
b) Maximum
c) Constant
d) Diminishing

74. Production function is not a factor of [ ]
    a) Land
    b) Labor
    c) Cost of capital
    d) Organization
75. If the level of production increases the total cost changes and thus the isocost curve [ ]
    a) Moves downward
    b) Moves upward
    c) Moves in a linear fashioner
    d) Moves in a haphazard manner
76. Isoquant are also called_____ [ ]
    a) Isoproduct curve
    b) Isocost curve
    c) Price indifference curve
    d) Indifference curve
77. In Cobb-Douglas production function "k" refers to [ ]
    a) Land
    b) Labour
    c) Capital
    d) Organization
78. The transformation of physical inputs into output is known as [ ]
    a) Production
    b) Supply
    c) Demand
    d) Cost
79. When the total cost curve cuts the total revenue curve in the BEP it is called [ ]
    a) Angle of incidence
    b) Angle of suppression
    c) Angle of depression
    d) None of the above
80. Which of the following is not a type of internal economies? [ ]
    a) Managerial economies
    b) Financial economies
    c) Technical economies
    d) Marginal economies
81. In the production function, at any given time, the output from a given set of input is [ ]
    a) Always fixed
    b) Always variable
    c) Semi fixed
    d) Semi variable
82. What do - decreasing returns imply? [ ]
    a) Increasing marginal product curve
    b) Increasing average product
    c) Decreasing marginal product curve
    d) Constant total product curve
83. Contribution margin is defined as [ ]
    a) Selling price-variable cost
    b) Selling price per unit-variable cost per unit
    c) Selling price*variable cost
    d) None of the above
84. Fixed cost per unit changes with---------- [ ]
    a) Volume of sales
    b) Profit
    c) Separable costs
    d) Volume of production
85. Such costs that involve an immediate outflow of cash are called [ ]
    a) Implicit costs
    b) Imputed costs
    c) Explicit cost

d) Joint cost

86. Short- run cost curves are called---------- [ ]
    a) Operating curves
    b) Fixed curves
    c) Variable curves
    d) Planning curves
87. Implicit or imputed costs are also called as---------- [ ]
    a) Future costs
    b) Controllable costs
    c) Book costs
    d) Joint costs
88. Historical costs are also called as---------- [ ]
    a) Future costs
    b) Joint costs
    c) Separable costs
    d) Past costs
89. Explicit costs are called ---------- [ ]
    a) In house costs
    b) Non cash costs
    c) In pocket costs
    d) Out of pocket costs
90. The cost of the next best alternative foregone is known as [ ]
    a) Implicit costs
    b) Sunk costs
    c) Opportunity costs
    d) Marginal costs
91. The cost that must be considered for decision making is---------- [ ]
    a) Outlay costs
    b) Opportunity cost
    c) Incremental cost
    d) Sunk cost
92. The cost that is to be paid currently if the asset were to be replaced are called [ ]
    a) Past costs
    b) Historical costs
    c) Replacement costs
    d) Joint costs
93. When do the fixed costs vary? [ ]
    a) In the short run
    b) In the long run
    c) In two years
    d) Less than two years
94. The total variable cost---------- proportionally with production [ ]
    a) Increases
    b) Decreases
    c) Constant
    d) No relation
95. Production is governed by certain laws of returns to scale, are called as---------- [ ]
    a) Diseconomies of scale
    b) Economies of scale
    c) Nominal scale
    d) Ordinal scale
96. Those costs which are essential for the sustainability of the business are called-- [ ]
    a) Escapable costs
    b) Economic costs
    c) Urgent costs
    d) Unavoidable costs
97. Which of the following is ascertained for a change in the level of activity [ ]
    a) Marginal
    b) Incremental

c) Controllable
d) Opportunity

98. Which of the following refers expenditure incurred to produce a product [ ]
a) Profit
b) Price
c) Capital
d) Cost

99. Which of the following includes cost of raw material, labor ---- [ ]
a) Demand
b) Total revenue
c) Total cost
d) Profit

100. The difference between the total revenue and total cost is called--------- [ ]
a) Cost of product
b) Cost of capital
c) Profit
d) Capital

101. The structure of the market is not based on [ ]
a) Degree of seller concentration
b) Degree of buyer concentration
c) Degree of product differentiation
d) Condition of exit from the market

102. Which of the following is said to exist when conditions are ideal and not realistic [ ]
a) Imperfect competition
b) Perfect competition
c) Monopoly
d) Monopolistic

103. Under perfect competition the price is equal to [ ]
a) AR=MR
b) AR>MR
c) MR> AR
d) MR not equal to AR

104. A monopolist can either control the price or _____ but not both [ ]
a) Cost
b) Output
c) Input
d) Profit

105. Based on number of buyers, imperfect markets can be classified as_____ [ ]
a) Monopsony
b) Duopsony
c) Oligopsony
d) All the above

106. To attain equilibrium in a perfect competition, MC curve should cut the MR curve [ ]
a) Straight line
b) From above
c) From below
d) As a parabola

107. The nature of demand curve in monopoly is_____ [ ]
a) Perfect elastic
b) Unit elastic
c) Inelastic
d) None of the above.

108. In a perfect competition, the firm's demand curve is also known as_____ [ ]
a) Average price curve
b) Marginal cost curve
c) Average cost curve
d) Average revenue curve.

109. Which of the following refers to the practice of selling the same product at different price to different buyers? [ ]

a) Product differentiation
b) Price in differentiation
c) Price discrimination
d) Product discrimination

110. Perfect competition is based on [ ]
a) Few number of buyers and sellers
b) Heterogeneous products and services
c) Each firm is a price maker
d) Perfect mobility of factors of production.

111. Which of the following is not a factor of monopoly? [ ]
a) Single firm
b) Includes no close substitutes nor competitors
c) Differential pricing
d) None of the above

112. Which of the following refers to the characteristics of a market that influence the behavior and performance of firms that sell in that market? [ ]
a) Market power
b) Market conduct
c) Market performance
d) Market structure.

113. Based on which of the following the market can be divided into perfect markets and imperfect markets. [ ]
a) Degree of concentration
b) Degree of differentiation
c) Degree of condition
d) Degree of competition.

114. Price in the long run is called [ ]
a) Standard price
b) Retail price
c) Market price
d) Normal price

115. The case of monopoly exists [ ]
a) MR>AR
b) MR=AR
c) MR<AR
d) None of the above.

116. The basis of price discrimination is not due to [ ]
a) Purchasing power
b) Quality bought
c) Customers
d) Quality sold

117. The average revenue curve for a firm under monopoly is a [ ]
a) Upward sloping
b) Linear
c) Down ward
d) Parabola

118. In the short period equilibrium ,the price at which available stock can be sold is called[ ]
a) Standard price
b) Retail price
c) Market price
d) Normal price

119. The cause for monopoly is not due to [ ]
a) Government policy
b) Control over outputs
c) Mergers
d) R&D

120. In a perfect competition the demand curve for an individual curve is horizontal and [ ]
a) Perfectly inelastic
b) Perfectly elastic

c) Unit elastic
d) None if the above

121. Which of the following refers to the change in revenue by selling one more unit [ ]
a) Total revenue
b) Average revenue
c) Marginal revenue
d) Marginal cost

122. In perfect competition the industry demand curve represents [ ]
a) The total demand of all sellers at various prices
b) The total demand of all buyers at various prices
c) The total demand of all consumers at various prices
d) The total demand of all investor at various prices

123. In a perfect competition, given a market price, how do you find the demand curve for the output of the individual firm [ ]
a) Vertical line
b) Horizontal line
c) Hyperbola
d) Parabola

124. In short period equilibrium , the at which the available stock can be sold is called [ ]
a) Standard price
b) Retail price
c) Market price
d) Normal price

125. In long run equilibrium , a firm can effect changes to all its factors of production to _____ the cost of production taking the advantage of the latest technology [ ]
a) Maximize
b) Zero
c) One
d) Minimize

Signature of faculty **Signature of HOD**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

B.Tech III year II Sem

I Mid Examination Subjective Question Bank

Subject: EM&I -80206 **Branch: EEE**

Name of the faculty: K.Anitha Reddy

Q. No.	Question	Bloom's Taxonomy Level	CO
1.	Explain about the errors in measurement.	Understanding	1
	OR		
2.	Explain about the PMMC.	Understanding	1
3.	Develop the Torque Equations of Electro Dynamometer Wattmeter?	Evaluating	1
4.	Develop the Torque Equations of PMMC?	Evaluating	1

5.	Explain about the Single Phase Energy Meter.	Understanding	1
6.	Explain Two Wattmeter Method.	Understanding	1
7.	Explain about the Extension Range of Voltmeters.	Understanding	1
8.	Explain about the Extension Range Ammeters.	Understanding	1
Module II			
1.	Explain about the Carey Foster Method.	Understanding	2
	OR		
2.	Explain about the Kelvin Double Bridge Method.	Understanding	2
3.	Explain about Megger.	Understanding	2
	OR		
4.	Explain About the Wheatstone Bridge when the bridge is balanced	Understanding	2
5.	Develop the Equation Of Current Through Galvanometer when Bridge is not Balanced?	Evaluating	2
	OR		
6.	Develop an Equation for an Loss of Charge Method?	Evaluating	2
7.	Explain about the Maxwell Bridge.	Understanding	2
	OR		
8.	Explain about the Hays Bridge.	Understanding	2
Module III			
1.	Explain about Current Transformer.	Understanding	3
	OR		
2.	Explain about Instrument Transformer.	Understanding	3
3.	Explain about the Potential Transformer.	Understanding	3
	OR		
4.	Explain the Comparison of CT and PT.	Understanding	3

Signature of the Faculty **Signature of the HoD**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

II B.Tech II Semester I Mid Question Bank

Subject: EM&I **Branch: EEE**

Name of the Faculty: K.ANITHAREDDY

OBJECTIVE QUESTIONS

1	The methods of measurement are	( )
A	Direct	
B	In direct	
C	none	
D	both	
2	The Measurements Of A Quantity	( )
A	Is An Act Of Comparison Of An Unknown Quantity With Another Quantity	
B	Is An Act Of Comparison Of An Unknown Quantity Whose Accuracy May Be Known Or May Not Be Known	
C	Is An Act Of Comparison Of An Unknown Quantity With A Predefined Acceptable Standard Which Is Accurately Known	
D	None Of The Above	
3	The Types of Error in measurement	( )
A	Gross Error	
B	Measurement Error	
C	Blunders	
D	All the above	
4	The Following Are The Desirable Dynamic Characteristics Of A Measuring Systems	( )
A	Fast Response ,Fidelity, Lag &Dynamic Error	
B	Fast Response &Measuring Lag	
C	Fidelity &Measuring Lag	
D	Fast Response &Fidelity	
5	PMMC Instrument Can Be Used For	( )
A	A C Works Only	
B	Both D C & Ac Work	
C	DC only	
D	None Of The Above	
6	Which instrument is the cheapest disregarding the accuracy	( )
A	PMMC	
B	Moving Iron	
C	Electro dynamometer type	
D	none	
7	Electrostatic Type Instrument Are Primarily Use For	( )
A	Voltmeter	
B	Ammeter	

C Wattmeter
D none
8 The multiplier and the meter coil in a voltmeter are in ( )
A series
B parallel
C series-parallel
D none of the above
9 Dynamometer type instrument are used for ( )
A A C Works Only
B Both D C & AC Work
C D C Works Only
D None Of The Above
10 Shunts are generally made of ( )
A copper
B aluminium
C silver
D manganin
11 In An Electro Dynamo Meter Type Of Watt Meter ( )
A The Current Coil Is Made Fixed
B The Pressure Coil Is Made Fixed
C AnyOf The Two Coils I.E., Current Coil Or Pressure Coil Can Be Made Fixed
D BothThe Coils Should Be Movable
12 The full scale deflection of moving coil instrument is about ( )
A 50mA
B 1A
C 3A
D 4A
13 In dynamometer type instrument ,damping torque is provided by ( )
A air friction
B eddy currents
C fluid friction
D none
14 In moving coil type instrument ,damping torque is provided by ( )
A air friction
B eddy currents
C fluide friction
D none
15 in moving iron type instrument ,damping torque is provided by ( )
A air friction
B eddy currents
C fluide friction
D none
16 for measuring high values of AC currents with Dynamometer ammeter, we use ( )
A shunt
B multiplier
C Potential Transformers
D Current Transformers
17 In Electrodynamo Meter Type Of Wattmeter ,The Inductors Of Pressure Coils Circuit Produces Error ( )
A Which Is Constant Irrespective Of The Power Factor Of The Load
B Which Is Higher At Low Power Factors
C Which Is Lower At Low Power Factors
D None Of The Above
18 The Braking Torque Provide By A Permanent Magnet In A Single Phase Energy Meter Is Proportional To The ( )
A Square Of The Flux Of The Permanent Magnet
B Speed Of The Meter
C Distance Of Permanent Magnet From The Centre Of The Revolving Disc
D All The Above
19 _____ Instruments are those which measure the total quantity of electricity delivered in a particular time. ( )
A Absolute

B Indicating
C Recording
D Integrating

20. Which of the following are integrating instruments ( )
A Ammeters
B Voltmeters
C Wattmeter
D Ampere-hour and watt-hour meters

21 Which of the following essential features is possessed by an indicating instrument ( )
A Deflecting device
B Controlling device
C Damping device
D All of the above

22 A _____ device prevents the oscillation of the moving system and enables the latter to reach its final position quickly ( )
A deflecting
B controlling
C damping
D any of the above

23 The spring material used in a spring control device should have the following property. ( )
A Should be non-magnetic
B Most be of low temperature co-efficient
C Should have low specific resistance
D All of the above

24 Which of the following properties a damping oil must possess? ( )
A Must be a good insulator
B Should be non-evaporating
C The viscosity of the oil should not change with the temperature
D All of the above

25 A moving-coil permanent-magnet instrument can be used as flux-meter ( )
A by using a low resistance shunt
B by using a high series resistance
C by eliminating the control springs
D by making control springs of large moment of inertia

26 Which of the following devices may be used for extending the range of instruments ? ( )
A Shunts
B Multipliers
C Current transformers
D All of the above

27 Most common form of meters met with in every day domestic and industrial installations are ( )
A mercury motor meters
B commutator motor meters
C induction type single phase energy meters
D all of the above

28 Which of the following meters are not used on circuits ( )
A Mercury motor meters
B Commutator motor meters
C Induction meters
D None of the above

29 Which of the following is an essential part of a motor meter ? ( )
A An operating torque system
B A braking device
C Revolution registering device
D All of the above

30 The household energy meter is ( )
A an indicating instrument
B a recording instrument
C an integrating instrument
D none of the above

31 The pointer of an indicating instrument should be ( )
A very light
B very heavy
C Both A and B
D neither A and B

32 The chemical effect of current is used in ( )
A ammeter hour meter
B ammeter
C energy meter
D none of the above

33 In majority of instruments damping is provided by ( )
A fluid friction
B spring
C eddy currents
D all of the above

34 An ammeter is a
A secondary instrument ( )
B absolute instrument
C recording instrument
D integrating instrument

35 In a portable instrument, the controlling torque is provided by ( )
A spring
B gravity
C eddy currents
D all of the above

36 The disc of an instrument using eddy current damping should be of ( )
A conducting and magnetic material
B non-conducting and magnetic material
C conducting and non-magnetic material
D none of the above

37 The function of shunt in an ammeter is to ( )
A by pass the current
B increase the sensitivity of the ammeter
C increase the resistance of ammeter
D none of the above

38 The resistance in the circuit of the moving coil of a dynamometer wattmeter should be ( )
A almost zero
B low
C high
D none of the above

39 The pressure coil of a wattmeter should be connected on the supply side of the current coil when ( )
A load impedance is high
B load impedance is low
C supply voltage is low
D none of the above

40 In a low power factor wattmeter the pressure coil is connected ( )
A to the supply side of the current coil
B to the load side of the current coil
C in any of the two meters at connection
D none of the above

41 PMMC has ( )
A Uniform scale
B Non uniform scale
C Both A and B
D none

42 In a 3-phase power measurement by two wattmeter method the reading of one of the wattmeter was zero. The power factor of the load must be ( )
A unity
B 0.5

C (c) 0.3
D zero
43 The adjustment of position of shading bands, in an energy meter is done to provide ( )
A frictioncompensation
B creep compensation
C braking torque
D none of the above
44. To Deflect the pointer which effects are used ( )
A Magnetic effect
B Thermal effect
C Induction effect
D All the above
45. Electrostatic voltmeter instruments are suitable for ( )
A Ac work only
B Dc work only
C Both ac and dc work
D None of these
46 If an electrostatic voltmeter is used on ac circuit and has non uniform waves, then it will read ( )
A Average values
B RMS values
C Peak values
D All of these
47 In electrostatic instruments iron is not used in their construction. These instruments are ( )
A Free from hysteresis and eddy current losses
B Free from temperature errors
C Dependent on temperature errors
D Both A and B
48 The multiplying factor of electrostatic voltmeters is given by ( )
A $(C + C_v) / C$
B $(C + C_v) / C_v$
C $C / (C+C_v)$
D $C_v / (C+ C_v)$
49 The range of electrostatic voltmeter can be extended by using ( )
A Resistance potential divider method
B Capacitance potential divider method
C Both A and B
D None of these
50 The resistance potential divider method and capacitance potential divider method is used for ( )
A Both ac and dc
B Former method can be used for both ac and dc and the later method can be used only for ac
C Former method can be used for ac only and the later method can be used for both ac and dc
D Former method can be used for dc only and the later method can be used only for ac
51 Maxwell-Wien bridge is used for measuring ( )
A capacitance
B dielectric loss
C inductance
D phase angle
52 Maxwell's L/C bridge is so called because ( )
A employs L and C in two arms
B ratio L/C remains constant
C for balance, it uses two opposite impedances in opposite arms
D balance is obtained when L = C
53 ..... bridge is used for measuring an unknown inductance in terms of a known capacitance and resistance. ( )
A Maxwell's L/C
B Hay's
C Owen
D Anderson
54 Anderson bridge is a modification of .....bridge. ( )
A Owen

B Hay's
C De Sauty
D Maxwell-Wien

55 Hay's bridge is particularly useful for measuring ( )
A inductive impedance with large phase angle
B mutual inductance
C self inductance
D capacitance and dielectric loss

56 The most useful ac bridge for comparing capacitances of two air capacitors is ..... bridge. ( )
A Schering
B De Sauty
C Wien series
D Wien parallel

57 Heaviside-Campbell Equal Ratio bridge is used for measuring ( )
A self-inductance in terms of mutual inductance
B capacitance in terms of inductance
C dielectric loss of an imperfect capacitor
D phase angle of a coil

58 If C_4 is the capacitance and R_4 is the resistance of Hay's bridge, then the Q factor of Hay's bridge is given by ( )
A $1 / \omega C_4 R_4$
B $\omega C_4 R_4$
C $\omega C_4 / R_4$
D $\omega R_4 / C_4$

59 The Hay's bridge is suitable for the measurement of inductances of coils with Q factor ( )
A More than 10
B Less than 1
C More than 1
D Less than 10

60 Anderson bridges is suitable for the measurement of ( )
A Resistance
B Inductance
C Capacitance
D All of these

61 The dielectric loss of pure capacitor is equal to ( )
A 1
B 0
C Maximum
D None of these

62 If δ is the loss angle then the dissipation factor is given by ( )
A $\sin \delta$
B $\cos \delta$
C $\tan \delta$
D $\cot \delta$

63 The Schering bridges can be used at ( )
A low voltage
B high voltage
C medium voltage
D both and

64 The bridge suitable for the measurement of capacitance is /are ( )
A Anderson's bridge
B Hay's bridge
C Owen's bridge
D None of these

65 Schering bridges are used for the measurement of ( )
A Unknown capacitance
B Dielectric loss
C Power factor
D All of these

66 The Ac Bridge which is used for the measurement of frequency is ( )

A Schering bridge
B Wien bridge
C Hay's bridge
D Anderson bridge

67 The Wien's bridges is suitable for the measurement of frequency of the range of ( )
A Less than 100 Hz
B 100 Hz to 100 kHz
C 1 kHz to 100 MHz
D More than 100 MHz

68 For the measurement of unknown inductance in terms of known capacitance, the suitable ac bridges are ( )
A Maxwell and Schering bridge
B Maxwell and Wien's bridge
C Maxwell and hay's bridge
D Hay's and Wien's bridge

69 If a capacitor is connected across a portion of resistance of multiplier of the wattmeter then the pressure coil of the circuit becomes ( )
A Inductive
B Non inductive
C Capacitive
D Non capacitive

70. Shielding of the capacitor is done to ( )
A Make the value of capacitor definite
B Balance the bridge without any problem
C Both Aand B
D None of these

71 In ac bridges, the Wagner earth devices are used to ( )
A Remove all the earth capacitances from the bridge circuit
B Remove harmonics
C Reduce error caused by stray electric field
D All of these

72 At 2 MHz, the resonance is obtained with a resonating capacitance value of 12 pF and at 400 kHz, the resonance is obtained with resonating capacitance value of 320 pF. Then the self capacitance of the coil is ( )
A 0.62 pF
B 0.83 pF
C 1.2 pF
D 1.5 pF

73 AC bridges are used for the measurement of
A Resistances
B Resistances and Inductances
C Inductances and capacitances
D Resistances, inductances and capacitances

74 AC bridges are used for the measurement of ( )
A Resistances
B Resistances and Inductances
C Inductances and capacitances
D Resistances, inductances and capacitances

75 The commonly used detectors in ac bridges is/are ( )
A Head phones
B Vibration galvanometers
C Tuned amplifiers, head phones
D Head phones, tuned amplifiers, vibration galvanometers

76 The vibration galvanometers are sensitive to power for frequency range of ( )
A 200 Hz and below
B 200 Hz to about 4 kHz
C 4 kHz and above
D Any frequency

77 the vibration galvanometer used as detector, it responds ( )
A Only to the fundamental frequency
B Only to the harmonics frequency

C Both A and B
D Does not respond to any frequency
78 The vibration galvanometer used as detector, it responds ( )
A Only to the fundamental frequency
B Only to the harmonics frequency
C Both A and B
D Does not respond to any frequency
79 The Ac Bridge used for the measurement of inductance is/are ( )
A Maxwell's inductance bridge
B Hay's bridge
C Anderson's bridge, Owen's bridge
D All of these
80 Under balanced condition, the current flowing through the detector is equal to ( )
A 1 A
B 0 A
C Sum of the currents flowing in the adjacent arms
D Difference between the current flowing in the adjacent arms
81 In Maxwell's Inductance-Capacitance bridge, the frequency ω ( )
A Is directly proportional to the inductance in the balanced equation
B Is inversely proportional to the capacitance in the balanced equation
C Is directly proportional to the product of inductance and capacitance
D Does not appear in the balanced equations
82 The Maxwell's Inductance-Capacitance bridge is not suitable for the measurement inductance of coil if the Q factor is ( )
A Less than 1
B Between 1 to 10
C More than 10
D Both A and B
83 The Q meter works on the principle of ( )
A Series resonance
B Parallel resonance
C Both and
D Neither series resonance nor parallel resonance
84 For the measurement of low resistances, Kelvin's double bridge has high accuracy because ( )
A It has two set of ratio arms which eliminates effect of resistance of connecting lead
B It has a null indicating galvanometer
C It has two null indicator
D It has four sets of ratio arms which eliminates the effect of resistance of connecting lead
85 For the measurement of low resistances from few ohms down to one micro ohm, which of the following instrument is not suitable? ( )
A Potentiometer method
B Ammeter –voltmeter method
C Ohmmeter
D Kelvin double bridge method
86 In a slide wire potentiometer, for a voltage source of 1.012 V the jockey is kept at 101.2 cm. If the potentiometer has 20 wires of 1 m each and the resistance of wires is 800 ohm, then the value of the working current is ( )
A 15 mA
B 20 mA
C 25 mA
D 27 mA
87 When a voltmeter-ammeter method is applied for the measurement of resistance, the voltmeter reads a value of 8.28 V and the ammeter reading is 4.14 mThen the value of the resistance will be ( )
A 2 kΩ
B 2.0 kΩ
C 2.00 kΩ
D 2.000 kΩ
88 Electrical equipments are generally earthed through an electrode to avoid shocks when someone touches the body of the equipment. The earth resistance is effected by ( )
A Depth of electrodes buried in the soil

B Shape and material of earth electrodes
C Specific resistance of the soil surrounding the electrode
D All of these

89 The earth resistance can be measured by ( )
A Fall of potential method
B Using an earth tester
C Ducter ohmmeter method
D Both A and B

90 Earth tester can operates on ( )
A Ac only
B Dc only
C Both ac and dc
D None of these

91 Megger is used for the measurement of ( )
A Low resistance
B Medium resistance
C High resistance
D Very high resistance

92 The sensitivity of the bridge is maximum when ( )
A P/R = Q/S = 0
B P/R = 1
C P/R = 0
D Q/S = 1

93 During a test, the strain gauge with resistance of 200 ohm undergoes a change of 0.120 ohm and the strain of the gauge is 1.2 $X10^{-4}$. Then the gauge factor will be ( )
A 4
B 5
C 4.5
D 6

94. Wheatstone bridge is suitable for the measurement of ( )
A Low resistance
B Medium resistance
C High resistance
D Very high resistance

95. The method/methods suitable for the measurement of low resistance is/are ( )
A Ammeter-voltmeter method
B Kelvin's double bridge method
C Potentiometer method
D All of these

96 The sensitivity of Wheatstone bridge is defined as ratio of ( )
A Deflection of the galvanometer to the unit fractional change in the value of unknown resistance
B Square of the deflection of the galvanometer to the unit fractional change in the value of unknown resistance
C Deflection of the galvanometer to the twice of the unit fractional change in the value of unknown resistance
D Unit fractional change in the value of unknown resistance to the deflection of the galvanometer

97 The example of low resistance is/are ( )
A Resistance of armature windings of electrical machine
B Resistance of series field winding of a dc machine
C Resistances of shunts and lead wires
D All of these

98 The accuracy in a bridge measurement depends on ( )
A Sensitivity of detector
B Applied voltage
C Accuracy of indicator
D Both A and B

99 In Wheatstone bridge method, the instrument used as null detector is ( )
A Ammeter
B Voltmeter
C Galvanometer
D All of these

100 Low resistance is the resistance of the order of ( )
A 1 ohm and less than 1 ohm
B 1 ohm to 1 mega ohm
C More than one ohm
D None of these
101 Current transformers and potential transformers are used to increase the ranges of ( )
A Ac ammeter and ac voltmeter respectively
B Ac ammeter and dc voltmeter respectively
C Dc ammeter and dc voltmeter respectively
D Dc ammeter and ac voltmeter respectively
102 For the measurement of energy and power it is essential to know ( )
A Only the transformation ratio
B Phase angle between the primary and secondary currents
C Both A and B
D None of these
103 The transformer ratio of the transformer depends upon the ( )
A Exciting current
B Secondary current
C Power factor of secondary circuit
D All of these
104 Primary current in a current transformer is determined by ( )
A The load on the system
B The load on its own secondary
C The load on its own primary
D All of these
105 The potential transformers are used to measure large voltage using ( )
A High range voltmeter
B Low range voltmeter
C High range ammeter
D Low range ammeter
106 If an instrument transformer is used to extend the ranges of AC instrument, then its reading will depend on ( )
A R
B L
C C
D None of these
107 The nominal ratio for a current transformer is given by ( )
A rated primary winding current / rated secondary winding current
B no. of turns in the primary winding / no. of turns in the secondary winding
C no. of turns in the secondary winding / no. of turns in the primary winding
D rated secondary winding current / rated primary winding current
108 The resistances of potential transformer winding is minimized by using ( )
A Thick conductors and small length of turns
B Thin conductors and small length of turns
C Thin conductors and large length of turns
D Thick conductors and large length of turns
109 In potential transformer, with increase in frequency the phase angle ( )
A Increases
B Decreases
C Remains same
D None of these
110 Under normal operating condition, the excitation current of current transformer and potential transformer ( )
A Both varies over a wide range
B Varies over a wide range, remains constant
C Remains constant, varies over a wide range
D Both remains constant
111 For the measurement of energy and power it is essential to know ( )
A Only the transformation ratio
B Phase angle between the primary and secondary currents
C Both A and B

D None of these

112 The transformer ratio of the transformer depends upon the ( )

A Exciting current

B Secondary current

C Power factor of secondary circuit

D All of these

113 Primary current in a current transformer is determined by ( )

A The load on the system

B The load on its own secondary

C The load on its own primary

D All of these

114 The potential transformers are used to measure large voltage using ( )

A High range voltmeter

B Low range voltmeter

C High range ammeter

D Low range ammeter

115 If an instrument transformer is used to extend the ranges of AC instrument, then its reading will depend on ( )

A R

B L

C C

D All of these

116 The resistances of potential transformer winding is minimized by using ( )

A Thick conductors and small length of turns

B Thin conductors and small length of turns

C Thin conductors and large length of turns

D Thick conductors and large length of turns

117 Current transformers and potential transformers are used to increase the ranges of ( )

A AC ammeter and AC voltmeter respectively

B AC ammeter and DC voltmeter respectively

C DC ammeter and DC voltmeter respectively

D DC ammeter and AC voltmeter respectively

118 Which of following are needed both for protection and metering? ( )

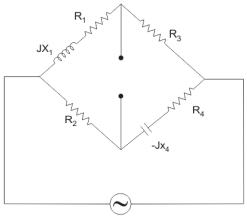
A Energy meter.

B Wattmeter.

C Instrument transformer.

D Power factor meters.

119 A bridge circuit is shown in the figure below. Which one of the sentence given below is most suitable for balancing the bridge? ( )



A First adjust R_2 and then adjust R_3.

B First adjust R_4 and then adjust R_1

C First adjust R_2 and then adjust R_4.

D First adjust R_4 and then adjust R_2.

120. A 50 Hz bar primary CT has a secondary with 500 turns. The secondary supplies 5 A current into a purely resistive burden of 1Ω. The magnetizing ampere-turn is 200. The phase angle between the primary and secondary current is ( )

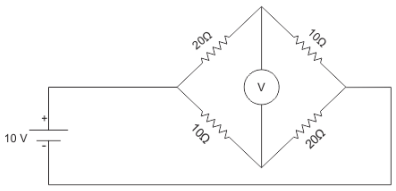
A 4.6°.

B 85.4°.

C 94.6°.

D 175.4°.

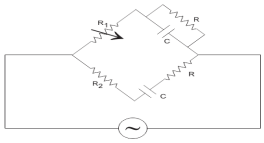
121 In the bridge given in the figure, the reasing of the high impedance voltmeter is ( )



A ZERO
B 6.66V
C 4.20V
D -3.33V

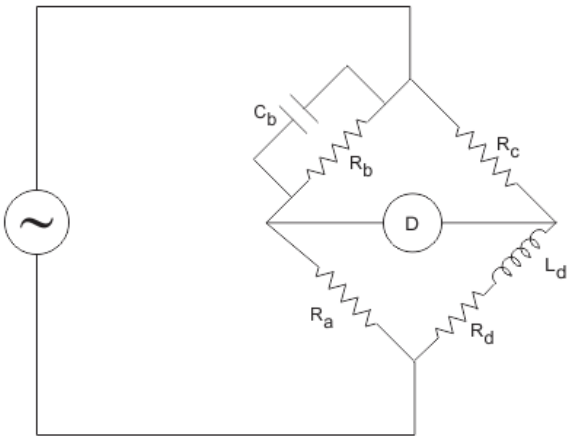
122 A Wheatstone bridge cannot be used for precision measurements because errors are introduced into on account of ( )
A Contact resistance.
B Resistance of connecting leads.
C Thermoelectric emfs.
D All of above.

123 The given figure shows wein bridge connection for frequency measurement. C and R are variables and gang together. ( )



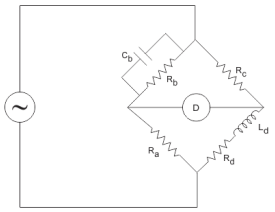
For balanced condition the expression for frequency is f = ½ CR when
A $R_1 = R_2$.
B $R_1 = 2R_2$.
C $R_1 = R_2/2$.
D $R_1 = 3R_2$.

124 For the AC bridge circuit shown in figure at balance the value of R_d will bewill be ( )



A $(R_a/R_c).R_b$
B $(R_b/R_a).R_a$
C $(R_b/R_a).R_c$
D $(R_a/R_b).R_c$

125 For the AC bridge circuit shown in figure at balance the value of L_d will bewill be ( )



A $(R_a/R_c).R$
B $(R_b/R_a).R_a$
C $(R_b/R_a).R_c$
D $(R_a/R_b).R$

Signature of Faculty **Signature of HoD**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

B.Tech– IV Sem (MR 18-2018-19 Admitted Students)
I Mid Examination Subjective Question Bank

Subject: Environmental Science **Branch /Specialization: CSE/ECE/EEE/IT**
Name of the faculty: K USHA RANI

Instructions:

1. All the questions carry equal marks

2. Answer all the questions

Q.No.	Question	Bloom's Taxonomy Level	CO
1.	Outline the structure of Ecosystem?	Understanding	1
	OR		
2.	Explain Flow of energy through various trophic levels in an ecosystem is unidirectional and noncyclical.	Understanding	1
3.	Compare Detritus food chain with grazing food chain.	Analyzing	1
	OR		
4.	Classify different types of ecosystems.	Analyzing	1
5.	Explain the scope and importance of ecosystem.	Understanding	1

OR			
6.	Outline the functional features of aquatic ecosystem.	Understanding	1
7.	Construct a food web in any one ecosystem.	Applying	1
OR			
8.	Develop two ecological pyramids basing on number of species and amount of biomass produced.	Applying	1
Module II			
1.	Illustrate in- situ and ex-situ conservation of biodiversity?	Understanding	2
OR			
2.	Classify different types of energy resources with examples?	Understanding	2
3.	Construct the flow chart on impacts of mining activities**?**	Applying	2
OR			
4.	Identify the values of biodiversity.	Applying	2
5.	Summarize with the help of case study how big dams have affected forests and the tribal.	Understanding	2
OR			
6.	Outline the major threats to biodiversity.	Understanding	2
7.	Discuss aquifers and its types?	Creating	2
OR			
8.	Discuss briefly about droughts and floods with respect to their occurrence and impacts.	Creating	2
Module III			
1.	Summarize all possible methods to Control Air Pollution in the Environment**?**	Understanding	3
OR			
2.	Compare point sources with non-point sources of pollution.	Understanding	3
3.	Explain the adverse effects and control of water pollution.	Understanding	3
OR			
4.	Illustrate major sources of surface water pollution and ground water pollution.	Understanding	3

5.	Identify the control methods of automobile and industrial pollution.	Applying	3
OR			
6.	Identify the sources of primary and secondary pollutants.	Applying	3

Signature of the Faculty **Signature of the HOD**

(K USHA RANI)

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

Department Of Chemistry
II B.TECH II SEM (MR 18)
ENVIRONMENTAL SCIENCE

(Common to EEE, ECE, CSE & IT)

OBJECTIVE QUESTION BANK FOR I MID

MODULE I

Multiple Choice Questions:

1. The food relation from grass--> deer-->tiger-->decomposer is called [ ]

   A) Eco pyramid
   B) Food chain
   C) Trophic level
   D) Energy flow

2. Pond eco-system food chain can be represented as: [ ]

   A) Grass→ Grasshopper→Lizard→ Eagle
   B) Grass→ Mouse→ Snake→ Hawk
   C) Phytoplanktons→ Zooplanktons→ Small fish→ Big fish
   D) None of the above

3. Identify the correct statement about ecosystem? [ ]

   A) Primary consumers are least dependent upon producers
   B) Primary consumers depend on carnivores
   C) Producers are more than primary consumers
   D) Secondary consumers are the largest and most powerful

4. Pyramid of numbers deals with the number of [ ]

   A) Species in area
   B) Subspecies in a community
   C) Individuals in a community
   D) Individuals in a tropic level

5. Food chain in which microorganisms breakdown the food by primary producers is [ ]

   A) Detritus food chain
   B) Grazing food chain
   C) Consumer food chain
   D) Predator food chain Always inverted

   consumer is [ ]

   A) An organism that produce its own food
   B) An organism that does not need food for survive
   C) An abiotic organism
   D) An organism that cannot produce its own food

7.Ecology deals with the study of [ ]

A) Living beings
B) Living and Non-living components interacting with environment
C) Reciprocal relationship between biotic and abiotic components
D) Environment

8. Feeding levels in food chain are called as: [ ]

A) Production levels

B) Eltonian pyramids

C) Food web

D) Tropical levels

9. Single channel energy flow model explains the flow of energy through [ ]

A) Grazing food chain

B) Detritus food chain

C) Both A& B

D) None

10. The interlocking pattern of food chain is called [ ]

A) Food chain

B) Food web

C) Ecological pyramid

D) Energy flow

MODULE-II

Multiple Choice Questions:

1. The value is based on the concept of live & let live called [ ]

A) Social value
B) Option value
C) Ethical value
D) Spiritual value

2. A renewable exhaustible natural resource is: [ ]

A) Petroleum
B) Forest
C) Coal
D) None

3. Which of the following types of coal has maximum carbon and calorific value? [ ]

A) Anthracite

B) Bituminous

C) Lignite

D) Wood coal

4.The energy harnessed from the hot rocks present inside the earth is called [ ]

A) Geothermal energy

B) Wind energy

C) Ocean thermal energy

D) Tidal energy

5. Which of the following is critical mineral? [ ]

A) Cobalt

B) Iron

C) Chromium

D) Magnesium

6. World environmental day is celebrated on the following day [ ]

A) November 13th

B) July 20 th

C) June 5th

D) April 7th

7. Land Subsidence occurs due to [ ]

A) Withdrawal of more ground water than its recharge

B) More recharge of ground water than its withdrawal

C) Equal rates of recharge and withdrawal

D) None

8. Aquifer which are sandwiched between two impermeable layers of rocks or sediments Called [ ]

A) Unconfined

B) Confined

C) Both

D) None

9. Identify the effects of over utilization of water resources: [ ]

A) Land subsidence

B) Lowering water table

C) Salt water intrusion

D) All

10. When variations occurs within a species due to new combination of genes called [ ]

A) Genetic diversity

B) Species diversity

C) Eco system diversity

D) None

MODULE III

Multiple Choice Questions:

1. Example for secondary pollutants is [ ]

A) Smog
B) PAN
C) Ozone
D) All

2. Carbon dioxide content in atmosphere [ ]

A) 70%

B) 0.03%

C) 0.5%

D) 2%

3. Oxidation of sulphur in the fossil fuels mainly produces [ ]

A) NO_2
B) SO_2
C) SO_3
D) Both B & C

4. Separation of heavy inorganic solids is known as [ ]

A) Sedimentation
B) Floatation
C) Neutralization
D) None

5. More BOD in water indicates [ ]

A) Poor quality
B) Good quality
C) Maintains quality
D) None

MODULE I

Fill in the blanks:

1. Grazing food chain starts from _____

2. The flow of energy in an eco-system is always _____

3. The pyramid of energy in a food chain is always _____

4. As energy flows through a food chain, energy in each successive level _____

5. The animals that feed on primary consumers directly are known as _____

6. Tropical grasslands in Africa are typically known as _____

7. The concept of ecological pyramid was first proposed by _____

8. _____ indicates who eats whom

9. Pyramid of numbers in a parasitic ecosystem is _____

10. Graphical representation of relationship of producers and consumers in terms of pyramids is known as _____

MODULE II

Fill in the blanks:

1. The percentage of water usage in agriculture sector globally is_____.

2. _____ resources are not generated

3. Solar cells are made up of thin wafers of semiconductors materials like_____& _____

4. Natural gas contains 95% of_____.

5. Quinine is obtained from the _____

6. The minimum wind speed required for the working of a wind generator is_____ Km/hr

7. _____ is the technique of conservation of all levels of biological diversity outside their natural habitats.

8. _____ can be extracted from bauxite

9. _____ conservation is the on-site conservation or the conservation of genetic resources in natural populations of plant or animal species

10. The hydro power potential of India is estimated to be about _____ Kw/hr

MODULE III

Fill in the blanks:

1. Photo chemical smog is produced by_____and sun light

2.Any single identifiable source of pollution from which pollutants are discharged is

Called_____source.

3. Itai Itai disease occurred due to consumption of_____contaminated rice

4. The most commonly used devices to control particulate emissions are_____&

_____

5. P^H value to be maintained for drinking water is _____

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

IV Semester I Mid Question Bank 2019-20

Subjective Question Bank

Subject: Power Generation and Distribution **Branch: EEE**

Name of the faculty: T.Sanjeeva Rao

Q. No.	Question	Bloom's Taxonomy Level	CO
	Module-I		
1	Explain the factors to be considered for selection of site for a thermal plant?	Understanding	CO1
	OR		
2	Explain the function and principle of operation of the following in thermal power plant : i. Economizer ii. Electrostatic precipitator iii. Condenser iv. Super heater v. cooling tower	Understanding	CO1
3	Analyze the process of nuclear fission and nuclear fusion.Discuss the advantages and Limitations of nuclear fusion process.	Analysing	CO1
	OR		
4	List the main components of a reactor? Explain the function of each component.	Analysing	CO1
5	Explain about the PWR with neat diagram.	Understanding	CO1
	OR		
6	Explain about the BWR with neat diagram	Understanding	CO1
7	List the advantages of a gas turbine plant?	Analysing	CO1
	OR		
8	Analyze a gas turbine plant with neat sketch?	Applying	CO1
	Module II		
1.	Explain any three elements of Hydro Electric power plant in detail?	Understanding	CO2
	OR		
2	Explain the types of Hydro Electric power plant?	Understanding	CO2
3	Explain about the following terms a) Dam b) Penstock c) Surge tank d) Draft tube	Understanding	CO2
	OR		

4	Explain about the mass curve.	Understanding	CO2
5.	Classify the types of turbines?	Analyzing	CO2
	OR		
6	Distinguish between Francis and Kaplan turbine?	Analyzing	CO2
7	Explain about the Pumped Storage Hydro power Plant.	Understanding	CO2
	OR		
8	Summarize about impulse and reaction turbines.	Understanding	CO2
	MODULE III		
1	Survey the factors that should be taken care of while designing and erecting substation.	Analyzing	CO3
	OR		
2	Distinguish between Indoor and Outdoor Substations.	Analyzing	CO3
3	Explain the main equipments in a substation.	Understanding	CO3
	OR		
4	Explain the Single bus bar arrangement with neat diagram.	Understanding	CO3

Signature of the Faculty **Signature of the HOD**

MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

IV Semester I Mid Question Bank 2019-20

Objective Question Bank

Subject: Power Generation and Distribution **Branch: EEE**

Name of the Faculty: Mr.T.Sanjeeva Rao

OBJECTIVE QUESTIONS

1 Which type of coal has lowest calorific value ( )
   a. peat
   b. lignite
   c. bituminous
   d. anthracite

2 Pipes carrying steam in thermal power plant are generally made of ( )
   a. steel
   b. cast iron
   c. cobalt
   d. aluminum ( )

3 Economizer of boiler has main function of:
   a. heat up the incoming water with excess steam
   b. heat up the pulverized fuel by exhaust gases
   c. heat up the incoming air by exhaust gases
   d. heat up the incoming water by exhaust gases

4 In a super heater: ( )
   a. pressure rises and temperature drops
   b. temperature rises and pressure drops
   c. temperature rises and pressure remains unchanged
   d. pressure rises and temperature remains the same

5 Steam turbine works on the principle of: ( )
   a. Carnot cycle
   b. brayton cycle
   c. rankine cycle
   d. none

6 The steam power plant efficiency can be improved by: ( )
   a. using large quantity of water
   b. burning large quantity of coal
   c. using high temperature and pressure of steam
   d. decreasing the load on the plant

7 As the size of the thermal power plant increases, the capital cost per kW of installed capacity: ( )
   a. increases
   b. decreases
   c. remains the same
   d. may increase and decrease

8 Vacuum can be measured by using ( )

a. rotameter
b. pitot tube
c. U tube manometer
d. Ventrimeter

9 Electrostatic precipitator is installed between: ( )
a. induced fan and chimney
b. economizer and air preheater
c. boiler furnace and economiser
d. air preheater and induced fan

10 Belt conveyors can be employed for transporting coal at inclination up to: ( )
a. 30 deg
b. 70 deg
c. 20 deg
d. 40 deg

11 Coal rank classifies coal as per its ( )
a. specific gravity
b. degree of metamorphism
c. carbon percentage
d. ash content

12 Induced draft fans are used to: ( )
a. cool the steam let out by the turbine in the thermal power station
b. pull the gases out of furnace
c. cool the hot gases coming out of boiler
d. forces the air inside the coal furnace

13 Generally the speed of turbine generators employed in thermal power plants will be in the range of: ( )
a. 750 rpm
b. 1000 rpm
c. 3000 rpm
d. 5000 rpm

14 Large size thermal power plants will be ( )
a. peak load plants
b. base load plants
c. can be operate either as peak load or base load plants
d. none

15 The auxiliary consumption of thermal power plants will be in the range ( )
a. 8-10% of power generated
b. 20-30% of power generated
c. 15-20% of power generated
d. 30-40% of power generated

16 Which of the following equipment is installed in steam power plant to reduce air pollution: ( )
a. Air filer
b. HEPA filter
c. Electro static precipitator
d. All the above can be used

17 Burning of low grade coal can be improved by: ( )
   a. pulverizing the coal
   b. blending with high quality coal
   c. oil assisted ignition
   d. all the above

18 Equipment used for pulverizing the coal is ( )
   a. hopper
   b. stoker
   c. ball mill
   d. electro static precipitator

19 The percentage of carbon in anthracite is usually ( )
   a. more than 90%
   b. about 70%
   c. about 60%
   d. about 40%

20 For the same power the size of the turbine: ( )
   a. increases with speed
   b. constant irrespective of speed
   c. decreases with speed
   d. none of the above

21 Out of the following which one is not a unconventional source of energy ( )
   a. Tidal power
   b. Nuclear energy
   c. Geothermal energy
   d. Wind power

22 Water gas is a mixture of ( )
   a. CO2 and O2
   b. O2and H2
   c. H2, N2 and O2
   d. CO, N2 and H2

23 Coal used in power plant is also known as ( )
   a. steam coal
   b. charcoal
   c. coke
   d. soft coal

24 Bagasse is ( )
   a. low quality coal
   b. a fuel consisting of wood
   c. a kind of rice straw
   d. fibrous portion of sugarcane left after extracting the juice

25 A graphical representation between discharge and time is known as ( )
   a. Monograph
   b. Hectograph
   c. Topograph
   d. Hydrograph

26 Which engine has the highest air fuel ratio ? ( )
   a. Petrol engine
   b. Gas engine
   c. Diesel engine
   d. Gas engine

27 Which of the following fuel material occurred naturally ( )
   a. U235
   b. Pu239
   c. Pu241
   d. U-233

28 Which of the following is not used as moderator? ( )
   a. water
   b. heavy water
   c. graphite
   d. boron

29 Which of the following has highest moderating ratio? ( )
   a. D2O
   b. H2O
   c. Carbon
   d. Helium

30 The reactor performs the following function as that of _____ in a steam power plant. ( )
   a. turbine
   b. furnace
   c. electric generator
   d. boiler

31 In pressurized water reactor ( )
   a. light water is used as coolant
   b. light water is used as coolant and moderator
   c. heavy water is used as coolant
   d. heavy water is used as coolant and moderator

32 In Canadium Deuterium Uranium reactor (CANDU), heavy water is used as ( )
   a. Moderator
   b. Coolant
   c. Neutron reflector
   d. All of the above

33 Gas cooled reactors are _____ moderated ( )
   a. Light water
   b. Heavy water
   c. Graphite
   d. Beryllium

34 In Sodium-Graphite reactor, sodium is used as ( )
   a. Coolant
   b. Moderator
   c. Reflector
   d. All of the above

35 In which of the following, an intermediate heat exchanger is used ( )

a. Pressurized water reactor
b. Boiling water reactor
c. Gas cooled reactor
d. Liquid metal cooled reactor

36 Moderator is not required in ( )
a. Gas cooled reactor
b. Pressurized water reactor
c. Breeder reactor
d. Boiling water reactor

37 In which of the following reactors, heat exchanger is not used? ( )
a. Pressurized water reactor
b. Boiling water reactor
c. CANDU reactor
d. Gas cooled reactor

38 In Canadium Deuterium Uranium reactor (CANDU), the control rods are made of ( )
a. Cadmium
b. Boron steel
c. Graphite
d. Beryllium

39 The following method(s) can be used to improve the thermal efficiency of open cycle gas turbine plant ( )
a. inter-cooling
b. Reheating
c. Regeneration
d. All of the above

40 Which of the following is (are) used as starter for a gas turbine ( )
a. An Internal combustion engine
b. A steam turbine
c. An auxiliary electric motor
d. All of the above

41 Gas turbine is shut down by ( )
a. Turning off starter
b. Stopping the compressor
c. Fuel is cut off from the combustor
d. Any of the above

42 In gas turbine, intercooler is placed ( )
a. before low pressure compressor
b. in between low pressure compressor and high pressure compressor
c. in between high pressure compressor and turbine
d. None of the above

43 In gas turbine, the function of Re-heater is to ( )
a. Heat inlet air
b. Heat exhaust gases
c. Heat air coming out of compressor
d. Heat gases coming out of high pressure turbine

44 The ‘work ratio’ increases with ( )
   a. increase in turbine inlet pressure
   b. decrease in compressor inlet temperature
   c. decrease in pressure ratio of the cycle
   d. All of the above

45 In the centrifugal compressor, total pressure varies ( )
   a. directly as the speed ratio
   b. square of speed ratio
   c. cube of the speed ratio
   d. All of the above

46 Coal broken into angular fragments is known as ( )
   a. coal briquettes
   b. coal breccia
   c. coal bank
   d. coal auger

47 Isotopes of uranium ( )
   a. U235
   b. U234
   c. U238
   d. All of the above

48 Baume scale measures ( )
   a. purity of water
   b. radioactivity
   c. specific gravity of liquids
   d. specific gravity of gases

49 Barn ( )
   a. spent fuel from a nuclear reactor
   b. a unit of area
   c. an electronic instrument for rapid counting of radiation
   d. a coal that does not form coke.

50 One barrel is nearly ( )
   a. 0.16 cubic meter
   b. 4.16 cubic meter
   c. 1.16 cubic meter
   d. 9.16 cubic meter

51 The cheapest plant in operation and maintenance is..... ( )
   a. Steam power plant
   b. Nuclear power plant
   c. Hydel power plant
   d. None of the above

52 The most simple and keen plant is ( )
   a. Steam power plant
   b. Nuclear power plant
   c. Hydel power plant
   d. None of the above

53 The annual depreciation of a hydro power plant is about ( )

a. 0.5% to 1.5%
b. 10% to 15%
c. 15% to 20%
d. 20% to 25%

54 The power output from a hydro-electric power plant depends on three parameters ( )
a. Head,type and dam of discharge
b. Head,discharge and efficiency of the system
c. Efficiency of the system,type of draft tube and type of turbine used
d. Type of dam,discharge and type of catchment area

55 In a hydro-electric plant,spillways are used ( )
a. To discharge all surplus water
b. To discharge surplus water on the downstream side of dam
c. Water is not available in sufficient quantity
d. None of the above

56 The running cost of hydro-electric power plant is.....paise per unit ( )
a. 10
b. 8
c. 5
d. 3

57 Francis and kaplan turbine is used for.....heads hydro-electric plant ( )
a. Medium and low head
b. High head
c. low head
d. low and High head

58 For high head hydro-electric plants,the turbine used is.. ( )
a. Pelton wheel
b. Francis
c. kaplan
d. All of the above

59 The cost of fuel transportation is minimum ---------- ( )
a. Thermal power plant
b. Nuclear power plant
c. Hydel power plant
d. None of the above

60 Pelton turbines are mostly... ( )
a. Horizontal
b. Vertical
c. Inclined
d. None of the above

61 Running cost of a hydro-electric power plant is.. ( )
a. Equal to running cost of a steam power plant
b. Less than a running cost of a steam power plant
c. More than a running cost of a steam power plant
d. None of the above

62 The cheapest plant in operation and maintenance is..... ( )

a. Thermal power plant
b. Nuclear power plant
c. Hydel power plant
d. None of the above

63 Location of the surge tank in a hydro-electric station is near to the..... ( )
a. Tailrace
b. Turbine
c. Reservoir
d. None of the above

64 Pelton wheel turbine is used for minimumof the following heads... ( )
a. 40 m
b. 120 m
c. 150 m
d. 180 m or above

65 In high head hydro power plant the velocity of water in penstock is about..... ( )
a. 1 m/s
b. 11 m/s
c. 7 m/s
d. 25 m/s

66 The function of a surge tank is..... ( )
a. To supply water at constant pressure
b. To produce surges in the pipe line
c. To relieve water hammer pressures in the penstock pipe
d. Both A and B

67 Operating charges are minimum in the case of.....for same power output ( )
a. Gas turbine plant
b. Hydel plant
c. Thermal power plant
d. Nuclear power plant

68 Gross head of a hydro power station is..... ( )
a. The difference of water level between the level in the storage and tail race
b. The height of the water level in the river where the storage is provided
c. The height of the water level in the river where the tail race is provided
d. None of the above

69 Operating charges are minimum in the case of.....for same power output ( )
a. Gas turbine plant
b. Hydel plant
c. Thermal power plant
d. Nuclear power plant

70 What type of Hydro plant is it if the Plant head is above 100m? ( )
a. High head hydro-plant
b. Medium head hydro-plant
c. Low head hydro-plant
d. Base load hydro-plant

71 Which type of hydro plant is it if the head of a hydro plant is 30 – 100m? ( )

a. High head hydro-plant
b. Medium head hydro-plant
c. Low head hydro-plant
d. Base load hydro-plant

72 Low head hydro plant is also known as ( )
a. Canal power plant
b. Medium head hydro-plant
c. Run-off river hydro-plant
d. Base load hydro-plant

73 Which plants supply the peak load for the base power plants? ( )
a. Mini hydel plants
b. Pump storage power plants
c. Low head plants
d. Run-off river power plants

74 Which plants are used with steam and IC engines? ( )
a. Pump storage power plants
b. Mini hydel plants
c. Low head plants
d. Run-off river power plants

75 Which type of turbines does modern hydro power plant use? ( )
a. Kaplan turbine
b. Francis turbine
c. Pelton wheel
d. cross flow turbine

76 Which type of hydro power plant can be with or without pondage? ( )
a. Run-off river power plants
b. Pump storage power plants
c. Mini hydel plants
d. Low head plants

77 The surge tank controls the water when the load on the turbine is_____ ( )
a. Equal
b. Increased
c. Decreased
d. Not present

78 Which type of valves is preferred for moderate heads? ( )
a. Butterfly valve
b. Tube valve
c. Needle valve
d. Globe valve

79 Which type of gate valves are used in high head installations? ( )
a. Tube valve
b. Needle valve
c. Butterfly valve
d. Pinch valve

80 The shaft power developed by the water passing through the prime mover is given by ( )

a. $P=mgH/1000 * n_o$
b. $P=mgH/10 * n_o$
c. $P=mgH/10000 * n_o$
d. $P=mgH/n_o * 1000$

81 On what does generation of Hydro power depends? ( )
a. Quantity of water available
b. On capacity of turbine
c. Height of head
d. Storage capacity

82 On what does the Quantity of water available at selected site depends? ( )
a. Temperature at the selected site
b. Humidity at selected site
c. Vegetation of the area
d. Hydrological cycle of area

83 Which two countries have vast hydro resources? ( )
a. Hungary and Luxemburg
b. India and china
c. Russia and Nepal
d. Japan and Georgia

84 What type of energy does rain falling holds relative to the oceans? ( )
a. Potential energy
b. Kinematic energy
c. Electrical energy
d. Motion energy

85 Capacity of hydraulic plant is dependent on __ ( )
a. Minimum quantity of water available
b. Vegetation of the selected area
c. Maximum quantity of water available
d. Available Head

86 What are used to store water during peak periods? ( )
a. Storage Reservoir
b. Canals
c. Sews
d. Storage drums

87 The evaporation of water from the surfaces and its precipitation is known as ( )
a. Temperature
b. Humidity
c. Vegetation of the area
d. Hydrological cycle

88 What do you call a graph which is plotted for discharge versus time? ( )
a. Snow Graph
b. Hydrograph
c. Rain graph
d. Fluid graph

89 Choose the correct sentence about information available from hydrograph among the following options? ( )
   a. The mean annual runoff or mean runoff each week of the year
   b. Total volume at that instant, as the area under hydrograph indicates the force of water during the duration
   c. Rate of flow at any particular time during the duration period
   d. Mean runoff for each month

90 What does hydrograph based on day gives? ( )
   a. Idea about flood period during the month
   b. Idea of rainfall
   c. Idea of draught during the year
   d. Idea of scarcity of water in the upcoming year

91 What information does the year wise hydrograph gives? ( )
   a. Draught
   b. Heavy Rainfall
   c. Rising cold
   d. Water scarcity

92 When is the Hydrograph called as a unit hydrograph? ( )
   a. When 1cm of runoff is resulted from a rain fal
   b. When 3cm of runoff is resulted from rainfall
   c. When 1mm of runoff is resulted from rainfall
   d. When 3mm of runoff is resulted from rainfall

93 Unit hydrograph was explained by Sherman in which year? ( )
   a. 1925
   b. 1928
   c. 1932
   d. 1945

94 What is unit hydrograph helpful in? ( )
   a. Estimating runoff from a basin
   b. Estimating no of days of rain fall
   c. Knowing the draught months in a year
   d. In deciding the land for hydel power plant

95 Above which range should be the unit hydrographs be used? ( )
   a. Around 5000 sq km
   b. Over 2500sq km
   c. Around 4000 sq km
   d. Below 3000 sq km

96 Francis turbine is _____ ( )
   a. Tangential flow
   b. Radial flow
   c. Axial flow
   d. Mixed flow

97 The magnitude of runoff as ordinates against the corresponding percentage of time as abscissa gives ( )
   a. Mass duration curve
   b. Load duration curve
   c. Power duration curve
   d. Flow duration curve

98 Kaplan turbine is _____ ( )
   a. Tangential flow
   b. Radial flow
   c. Axial flow
   d. Mixed flow

99 Which of the following is an impulse turbine? ( )
   a. Pelton turbine
   b. Francis turbine
   c. Kaplan turbine
   d. Propeller turbine

100 A hydraulic turbine converts the potential energy of water into ( )
   a. High head and low discharge
   b. High head and high discharge
   c. Medium head and low discharge
   d. Low head and high discharge

101 Stones are provided in the substation to: ( )
   a. To avoid fire accident by draining oil from transformer if leaks
   b. To avoid growing of weeds and plants
   c. To provide insulation
   d. All the above

102 What is the minimum phase to phase clearance required for 400kV conductors in substation ( )
   a. 3500 mm
   b. 4200 mm
   c. 5000 mm
   d. 4500 mm

103 Which of the device is employed in substation to limit the short circuit current in the power system ( )
   a. Shunt condenser
   b. Reactor
   c. Series capacitor
   d. Shunt capacitor

104 Which of the following busbar arrangement is generally employed in distribution system ( )
   a. One-and-half breaker arrangement
   b. Main and transfer arrangement
   c. Ring main distribution system
   d. Single busbar arrangement system

105 The size of Gas Insulated Substation is significantly small compared to conventional substation because ( )
   a. High electronegative property of SF6 gas
   b. High dielectric property of SF6 gas
   c. High Insulation property of SF6 gas

d. All the above

106 In order to improve the power factor ___ device is employed in the substation ( )
a. Synchronous condenser
b. Synchronous reactor
c. Series Capacitors
d. None of the above

107 Factors on which material of station busbar depends? ( )
a. Current Carrying capacity
b. Short Circuit Stresses
c. Establishing minimum electrical clearances
d. All the above

108 Which is the first equipment seen in the substation while coming from transmission system ( )
a. Circuit breaker
b. Lightning arrester
c. Current transformer
d. Transformer

109 Gas Insulated Substation is employed where ( )
a. Where there is less space available
b. For high altitude substations
c. In terrain region
d. All the above

110 A bus coupler circuit breaker is utilized in a substation for ( )
a. Joining the transmission line with station bus-bar
b. Joining main and transfer bus in a substation
c. Joining the generator with transfer
d. Joining the neutral of the generator with earth

111 Which of the gas is used in gas insulated substation ( )
a. Nitrogen + SF6
b. Hydrogen + SF6
c. SF6
d. None of the above

112 Which of the following bus-bars arrangement is more reliable and flexible ( )
a. Main and transfer bus scheme
b. One-and-half breaker scheme
c. Double main busbar scheme
d. Single busbar scheme

113 What is the maximum transmission voltage substation in India ( )
a. 400 kV
b. 500 kV
c. 750 kV
d. 1000 kV ( )

114 A busbar is rated by

a. Current only
b. Voltage only
c. Current, voltage and frequency
d. Current, voltage, frequency and short circuit current ( )

115 In a substation current transformers are used to
a. Measuring purpose
b. Protection purpose connecting to relays
c. Both (a) and (b)
d. None of the above

116 Step potential and Touch potential is associated with ( )
a. High voltage transmission
b. Earthing of the substation
c. Voltage rise in the substation
d. Communication systems

117 It is the minimum clearance required between the live conductors and maintenance operators limit ( )
a. Ground clearance
b. Phase clearance
c. Sectional clearance
d. None of the above

118 Material generally used for bus bar is ( )
a. copper
b. aluminum
c. steel
d. tungsten ( )

119 Which of following properties has got higher value for aluminium as compared to copper?
a. Melting point
b. Specific gravity
c. Electrical resistivity
d. Thermal conductivity

120 Isolators are used to disconnect a circuit when ( )
a. line is on full load
b. line is energized
c. circuit breaker is not open
d. there is no current in the line

121 Which device automatically interrupts the supply in the event of surges ( )
a. Earthing switch
b. Series reactor
c. Isolator

d. Circuit breaker

122 Which of the following equipment is not installed in a substation ? ( )

a. Shunt reactors
b. Exciters
c. Voltage transformers
d. Series capacitors.

123 Which bus bar scheme offers the lowest cost ? ( )

a. Single bus bar scheme
b. Ring bus bar scheme
c. Breaker and a half scheme
d. Main and transfer scheme ( )

124 Which is the most expensive bus bar scheme ?

a. Single bus bar scheme
b. Ring bus bar scheme
c. Double bus bar double breaker
d. Main and transfer scheme

125 Current rating is not necessary in case of ( )

a. Isolators
b. Circuit breakers
c. Load break switches
d. Circuit breakers and load break switches.