

JNTU ONLINE EXAMINATIONS [Mid 1 - emi]

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1. A digital voltmeter has a readout range from 0 to 9,999 counts. Determine the resolution [01D01]

- a. 1 mv
- b. 10 mV
- c. 1  $\mu$ V
- d. 100 mV

2. Which of the following is not a static characteristics? [01M01]

- a. Drift
- b. Dead zone
- c. Sensitivity
- d. Fidelity

3. \_\_\_\_\_ is defined as the difference between the largest and smallest reading of instrument [01M02]

- a. Span
- b. Range
- c. Dead space
- d. Resolution

4. \_\_\_\_\_ refers to the degree of closeness or conformity to the true value of quantity under measurement [01M03]

- a. Precision
- b. Accuracy
- c. Drift
- d. Resolution

5. \_\_\_\_\_ is defined as the nearness of the indicated value to the true value of the quantity being measured [01S01]

- a. Accuracy
- b. Resolution
- c. Reproducibility
- d. Static error

6. \_\_\_\_\_ is defined as the ability of the instrument to reproduce a certain set of readings within a given accuracy [01S02]

- a. Accuracy
- b. Precision
- c. Reproducibility
- d. Static error

7. \_\_\_\_\_ is defined as the largest change in input quantity for which there is not output of the instrument [01S03]

- a. Drift
- b. Dead zone
- c. Fidelity
- d. Accuracy

8. The smallest measurable input change is called \_\_\_\_\_ [01S04]

- a. Resolution
- b. Threshold
- c. Dead Zone
- d. Drift

9. The smallest measurable input is called \_\_\_\_\_ [01S05]

- a. Resolution
- b. Threshold
- c. Dead Zone
- d. Drift

10. A wheat stone bridge requires a change of 7  $\Omega$  in the unknown arm of the bridge to produce a change in deflection of 3mm of the galvanometer sensitivity is \_\_\_\_\_

[02D01]

- a. 3/7
- b. 7/3
- c. 9/49
- d. 49/9

11. The voltage of a circuit is measured by a voltmeter having input impedance comparable with the output impedance of the circuit there by causing error in voltage measurement. This error may be called as [02D02]

- a. Gross error
- b. Random
- c. Error caused by misuse of instrument
- d. Error caused by loading effect

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12. A meter reads 127.50V and the true value of voltage is 127.43

(i) static error \_\_\_\_\_

(ii) static correction \_\_\_\_\_ [02M01]

- a. 0.07V, 0.07V
- b. 0.07V, -0.07V
- c. -0.07V, 0.07V
- d. -0.07V, 0.07V

13. Find the span for given range

Upper limit: 55V

Lower Limit: 0V [02M02]

- a. 55
- b. 60
- c. 45
- d. 40

14. The mean deviation [02M03]

- a.
- b.
- c.
- d.

15. A Thermometer reads 95.45 C and the static correction given 0 in the correction curve is -0.08 C. Then the True value is \_\_\_\_\_ [02S01]

- a. 95.37
- b. 95.53
- c. 95.47
- d. 95.63

16. What type of errors are due to shortcomings of the instruments like defective (or) worn parts? [02S02]

- a. Gross errors
- b. Systematic errors
- c. Random errors
- d. Environment errors

17. What type of errors are due to largely human errors like misreading of instruments? [02S03]

- a. Gross errors
- b. Systematic errors
- c. Random errors
- d. Environmental errors

18. Variance = [02S04]

- a. Standard deviation
- b. 1/standard deviation
- c. 1/(standard deviation) 2
- d. (standard deviation) 2

19. A 0-300V voltmeter has an error of  $\pm 2\%$  of full scale deflection. What would be

the range of readings if true voltages is 30V ?  
[03D01]

- a. 24V-36V
- b. 29.4V-30.6V
- c. 20V to 40V
- d. 30V-40V

20. \_\_\_\_\_ is defined as the degree to which the instrument indicates the changes in the measured without dynamic error [03M01]

- a. Fiedlity
- b. Dynamic error
- c. Speed of response
- d. Settling time

21. \_\_\_\_\_ is the time for the instrument ot reach and stay within a specified tolerance band around its final value [03M02]

- a. Fiedlity
- b. Dynamic error
- c. Speed of response
- d. Settling time

22. A set of readings has a wide range and therefore it has [03S01]

- a. low precision
- b. high precision
- c. low accuracy
- d. high accuracy

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23. Which of the characteristic is not a dynamic characteristic? [03S02]

- a. Fiedlity
- b. Dynamic error
- c. Resolution
- d. Measured log

24. \_\_\_\_\_ is the delay in the response of the instrument to the change in the measured quantity [03S03]

- a. Dynamic error
- b. Fiedlity
- c. Measured lag
- d. Speed of response

25. \_\_\_\_\_ is the rapidity with which a measuring device responds to the change in the measured [03S04]

- a. Dynamic error
- b. Fiedlity
- c. Measurement log
- d. Speed of responce

26. \_\_\_\_\_ is the difference between the true value of quantity and the value indicated by instrument [03S05]

- a. Dynamic error
- b. Fiedlity
- c. Measurement lag
- d. Speed of response

27. A pressure measurement instrument is calibrated between 10 bar and 250 bar. The scale span of the instrument is [04D01]

- a. 10 bar
- b. 250 bar
- c. 240 bar
- d. 260 bar

28. An amplifier has a input single voltage 25  $\mu$ V and a noise voltage 2.5  $\mu$ V. S/N ratio is given by [04D02]

- a. 10 dB
- b. 100 dB

- c. 10dB
- d. 100dB

29. A d' Arsonval movement is rated at 50  $\mu$ A, Its sensitivity is given by [04M01]

- a. 20000
- b.
- c.
- d.

30. In measurement system, which of following are undesirable static characterstics? [04S01]

- a. Sensitivity, accuracy
- b. Drift, static error and dead zone
- c. Reproducibility, nonlinearity
- d. Drift, static error, dead zone and non-linearity

31. The units for voltmeter sensitivity [04S02]

- a.
- b.
- c.
- d.

32. Voltmeter sensitivity S= [04S03]

- a.
- b.
- c.
- d.

33. The addition of a \_\_\_\_\_, converts the basic d' Arsonval movement into a DC voltmeter [04S04]

- a. Parallel resistor
- b. Series Capacitor
- c. Series resistor
- d. Parallel Capacitor

34. The following general precautions should be observed when using a voltmeter

(A) Observe the correct polarity. Wrong polarity causes the meter to deflect against the mechanical stop and this may damage the pointer

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(B) Place the voltmeter across the circuit or component whose voltage is to be measured [04S05]

- a. A, B are wrong
- b. A is correct, B is wrong
- c. Both are correct
- d. Both are false

35. Choose the correct one

(i) The ammeter, the voltmeter and the ohmmeter all use a d' Arsonval movement

(ii) The instrument, which contain a function switch to connect the appropriate circuit to the d' Arsonval movement is often called a multimeter (or) VOM [04S06]

- a. Both are false
- b. Both are True
- c. (i) is correct : (ii) is false
- d. (i) is false : (ii) is correct

36. A voltmeter has a resistance of 20000. When it is connected across a DC circuit its power consumption is 2mw. Suppose the voltmeter is placed by a voltmeter of

4000  $\Omega$  resistance. The power consumption will be [05D01]

- a. 2 mw
- b. 0.05 mw
- c. 1mw

d. 4 mw

37. A 1mA d'Arsonval multimeter movement has a resistance of 100  $\Omega$ . It is to be converted to 10V voltmeter. The value of multiplier resistance is given by [05D02]

- a. 999  $\Omega$
- b. 9999  $\Omega$
- c. 99000
- d. 990  $\Omega$

38. A 1mA ammeter has a resistance of 100  $\Omega$ . It is to be converted to a 1A ammeter.

The value of shunt resistance is [05D03]

- a. 0.001  $\Omega$
- b. 0.1001  $\Omega$
- c. 100000  $\Omega$
- d. 100  $\Omega$

39. A 1mA meter movement with an internal resistance of 1000  $\Omega$  is to be converted in to 0-100mA ammeter. Calculate the value of shunt current  $I =$  [05M01] S

- a. 10mA
- b. 1mA
- c. 99mA
- d. 100mA

40. In a series Type ohmmeter [05M02]

a. 'O' marking is on the left hand side of scale while 8 marking is on the right hand side

b. 'O' marking is on the right hand side of scale and 8 marking on the left hand side

c. Two marking can be left or right side of the scale

d. 'O' marking is in the middle of scale

41. Find the R in the given circuit s [05M03]

- a.
- b.
- c.
- d.

42. The voltmeter has a sensitivity of 100  $\Omega/V$  and 50V. Calculate the R (R is  $V/V$  voltmeter resistance) [05M04]

- a. 5  $\Omega$
- b. 5 k  $\Omega$
- c. 50  $\Omega$
- d. 500  $\Omega$

43. Find the  $R_s$  in the given circuit [05M05]

- a.
- b.
- c.
- d.

44. The following precautions should be observed when using an ammeter

(i) Never connect an ammeter across a source of emf [05S01]

(ii) No need to observe the correct polarity [05S01]

- a. Both are True
- b. (i) True, (ii) false
- c. Both are false
- d. (i) false, (ii) True

45. A multi ammeter of resistance 100  $\Omega$  is connected in series with a circuit. Its power consumption is 0.1 mw. Supposing It is replaced with a milliammeter of 2000

resistance the power consumption will be [06D01]

- a. 0.2 mw

b. 0.05 mw

c. 0.1 mw

d. 0.5 mw

46. The following characteristics are common to various type of signal generators

(i) The frequency of the signal should be well known and stable

(ii) The Output signal should be free from distortion [06D02]

a. Both are True

b. (i) True (ii) false

c. Both are false

d. (i) false (ii) true

47. The following precaution should be observed when using an ammeter in measurement work

(i) Observe the correct polarity

(ii) When using a multirange meter, first use the highest current range [06M01]

a. Both are false

b. Both are True

c. (i) is true, (ii) is false

d. (i) is false, (ii) is true

48. The range of AF oscillators [06M02]

a. 10 kHz - 30 MHz

b. 20 H to 20 kHz 3

c. dc - 5 MHz

d. 1.5 MHz to 30 MHz

49. In a series Type of ohmmeter, the zero adjustment should be done [06S01]

a. By changing the value of series resistance

b. By changing the value of shunt resistance connected across the meter movement

c. By changing both series as well as the shunt resistance

d. By changing the battery voltage

50. A make break switch is provided to disconnect the battery when the meter is not in use in [06S02]

a. Both series and shunt ohmmeters

b. Only in series Type ohmmeters

c. Only in shunt type ohmmeter

d. For series Type of voltmeter

51. (i) The sensitivity of a DC voltmeter is an important factor when selecting a meter for a certain voltage measurement

(ii) A low sensitivity meter may give correct readings when measuring voltages in low resistance circuits [06S03]

a. Both are True

b. (i) is True, (ii) is false

c. Both are false

d. (i) is false, (ii) is True

52. The following general precautions should be observed when using a voltmeter

(i) Always be aware of loading effect

(ii) When using a multirange voltmeter, always use the highest voltage range and then decrease the range until a good up scale reading is obtained [06S04]

a. Both are false

b. (i) is True, (ii) is false

c. Both are True

d. (ii) is True, (i) is false

53. The pulse Risetime is defin as the time taken by the pulse [06S05]

- a. to go from 10% to 90% of its amplitude
- b. to go from 0% to 100% of its amplitude
- c. to go from 0% to 90% of its amplitude
- d. to go from 10% to 100% of its amplitude

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54. A wien's bridge oscillator circuit is shown in fig.  $R=6k\ \Omega$ ,  $C=3\ nF$ ,  $R=6k\ \Omega$   $R=12\ k\ \Omega$

The frequency of oscillator [07D01]

- a. 8.8 kHz
- b. 4.42kHz
- c. 8.84 MHz
- d. No oscillations occur as Barkhausen Criteria is not satisfied

55. A video frequency oscillator has a frequency range of [07G01]

- a. 20 Hz to 20 kHz
- b. 20 kHz to 30 MHz
- c. dc to 5mHz
- d. 2 mHz to 30 mHz

56. In phase shift oscillator, it consists of equal valued capacitors and resistors connected in cascade. Each stage provides a phase shift of [07G02]

- a. 30°
- b. 45°
- c. 60°
- d. 90°

57. In signal generator [07S01]

- a. energy is created
- b. energy is generated
- c. energy is converted from a simple dc source into a.c energy at some specific frequencies
- d. energy is consumed

58. Feedback oscillators have a closed loop gain of [07S02]

- a.
- b.
- c.
- d.

59. A wein bridge oscillator operates in \_\_\_\_\_ range [07S03]

- a. AF
- b. RF
- c. Video frequency
- d. High frequency

60. Which of them is not a AF oscillators? [07S04]

- a. Beat frequency oscillator
- b. Wein bridge oscillator
- c. Phase shift oscillator
- d. Tunnel diode oscillator

61. The simple sine wave generator consists of [07S05]

- a. Only an oscillator
- b. Only an attenuator
- c. Oscillator, attenuator
- d. Frequency divider, attenuator

62. The amplitude accuracy of sine wave generator depends on [07S06]

- a. Only design of the attenuator
- b. Only design of the oscillator
- c. Only design of the frequency divider
- d. Both the attenuator, oscillator

63. The attenuator reduces the power of an input such that

the input power to output power is a constant. The reduction power expressed as [08D01]

- a.  $A(dB) =$
- b.  $A =$
- c.  $A =$
- d.

64. The frequency of oscillation for phaseshift oscillates [08D02]

- a.
- b.
- c.
- d.

65. Duty cycle = [08M01]

- a.
- b.

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- c.
- d.

66. Duty factor for pulse wave is given by [08M02]

- a.
- b.
- c.
- d.

67. The frequency of oscillation in an RC network is given by [08M03]

- a.  $f = 2\pi RC$
- b.
- c.
- d.

68. In the oscillatory circuit, the elements can be used to set the frequency of oscillator [08S01]

- a. inductor, resistor
- b. inductor, capacitor
- c. capacitor, resistor
- d. inductor, resistor

69. \_\_\_\_\_ is defined as the ratio of average value of the pulse over one cycle and the peak value are inversely related to their time duration [08S02]

- a. Duty cycle
- b. Complete cycle
- c. Synchro cycle
- d. Wave cycle

70. Expansion for B.F.O [08S03]

- a. Beat frequency oscillator
- b. Best frequency oscillator
- c. Beat frequency oscilloscope
- d. Best frequency oscilloscope

71. Which combination of the statemnts is applicable

(i) The most common outputs from the function generates is sine, square, Triangular waves

The frequency of these wave forms may be adjusted from a fraction of a hertz to several hundred kilo Hertz [08S04]

- a. (i), (ii) are correct
- b. (i), (ii) are wrong
- c. (i) correct, (ii) wrong
- d. (i) wrong, (ii) correct

72. Output impedance of a laboratory quality pulse generator (Typical specification) [09D01]

- a. 50 O
- b. 100 O
- c. 1KO
- d. 5KO

**73. Pulse width of a laboratory quality pulse generator (Typical specification) [09D02]**

- a. 25n sec to 3 sec
- b. 4 sec to 10 sec
- c. 1 sec to 3 sec
- d. 7 sec to 10 sec

**74. Determine frequency for pulse generator R=75 kO, C=0.01  $\mu$ F, F= [09M01]**

- a. 924 Hz
- b. 724 Hz
- c. 824 Hz
- d. 1024 Hz

**75. Determine pulse width for pulse generator R=75 kO, C=0.01  $\mu$ F, T=0.693 RC=? [09M02]**

- a. 0.173 ms
- b. 0.173 ns
- c. 0.173 s
- d. 1.73 s

**76. Compute duty cycle for given information pulse width=0.173, pulse period = 1.08; Duty cycle=? [09M03]**

- a. 16%
- b. 26%

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- c. 36%
- d. 06%

**77. A function generator is a versatile instrument that delivers a choice of different waveforms whose frequencies are \_\_\_\_\_ [09S01]**

- a. fixed
- b. variable over a small range
- c. variable over a wide range
- d. depends on wave form

**78. The frequency for pulse generator [09S02]**

- a.
- b. 0.693 RC
- c. RC
- d.

**79. The most basic pulse generator [09S03]**

- a. astable multivibrator
- b. monostable multivibrator
- c. schmitt trigger
- d. frequency control

**80. The frequency of pulse is 924Hz. Compute time period T=? [09S04]**

- a. 0.08ms
- b. 1.08ms
- c. 2.08 ms
- d. 3.08ms

**81. Semiconductor noise diode given an output frequency in the band [10D01]**

- a. 1 Hz to 100Hz
- b. 100 Hz to 10n KHz
- c. 50 KHz to 200 KHz
- d. 200 KHz to 1 MHz

**82. In sweep generator, the time base is usually adjustable to give output sweep times in the range from [10M01]**

- a. less than 10ms
- b. 10m to greter than 100s

- c. 1  $\mu$ s to 10 $\mu$ s
- d. 10  $\mu$ s to 100 $\mu$ s

**83. In swept frequency generator, The time base is frequently a [10M02]**

- a. sine wave
- b. sine wave(or)pulse
- c. Trangular (or) sawtooth
- d. Trangular or sine wave

**84. (i) The two modes are used to set the swept frequency range (1) the start-stop, (2) f m ode**

**(ii) The stop and start frequency are set from the front panel [10M03]**

- a. (i), (ii) are True
- b. (i), is True, (ii) is false
- c. (i) (ii) are false
- d. (i) is false (ii) is true

**85. An stable multivibrator uss a resistance of 100 kO and capacitance 0.01  $\mu$ F. The frequency of square wave generated by it is [10S01]**

- a. 924 Hz
- b. 0 593Hz
- c. 693 Hz
- d. 110 Hz

**86. A triangular wave shape is obtained [10S02]**

- a. by integrating a square wave
- b. by differentiating in wave
- c. by differentiating a square wave
- d. by integrating a sine wave

**87. A random noise generator produces a single [10S03]**

- a. Whose amplitude varies randomly
- b. Which has no periodic frequency
- c. Has an unpredictable power specturn
- d. Whose amplitude constant

**88. An astable multivibrater [10S04]**

**a. gives one output pulse for every two input pulses**

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- b. gives a timed output puls for a trigger input
- c. gives a train of output pulse for a trigger input
- d. gives four output pulses for a single input pulse

**89. Random noise can be genrated by using [10S05]**

- a. Zener diode generator
- b. P-n diode generator
- c. Tunnel diode generator
- d. Transistor generator

**90. In sweep frequency generator two oscillator, on with frequency range of 3 GHz to 5 GHz is hetrodyned with a second oscillator having a fiscd frequency output of 3 GHz, the output frequency varies from [11D01]**

- a. 0 to 2 GHz
- b. 6 GHz to 8 GHz
- c. 0 to 3GHz
- d. 0 to 5GHZ

**91. The noise having equal power density at all frequency is called \_\_\_\_\_ [11M01]**

- a. Pink noise
- b. Black noice
- c. White noise
- d. Red noise

**92. The spectrum of Random noise covers all frequencies and is reffered to as \_\_\_\_\_ [11M02]**

- a. Pink noise

- b. Black noise  
c. **White noise**  
d. Red noise
93. The method of generating noise is usually to use a semiconductor noisediode, which delivers frequencies in a band \_\_\_\_\_ [11M03]  
a. 80-220 kHz  
b. 1Hz - 70KHz  
c. 300 KHz-500KHz  
d. 500 KHz-750KHz
94. Video pattern generator employs \_\_\_\_\_ of multivibrators [11S01]  
a. One stable chain  
b. **Two stable chains**  
c. Three stable chain  
d. Four stable chains
95. In video pattern generator, multivibrator produces \_\_\_\_\_ video signal [11S02]  
a. **square wave**  
b. Trangular wave  
c. Sine wave  
d. Sawtooth wave
96. Sweep rate of sweep generator could be of the order of \_\_\_\_\_ [11S03]  
a. **20 sweeper/second**  
b. 25 sweeps/second  
c. 30 sweeps/second  
d. 45 sweeps/second
97. Square wave generated in video pattern generator, the pulse are derived from [11S04]  
a. **50Hz mains of master oscillator**  
b. 150Hz mains of master oscillator  
c. 100 Hz mains of master oscillator  
d. 200 Hz mains of master oscillator
98. Calibration accuracy of signal generator under normal conditions [12D01]  
a.  **$\pm 2\%$**   
b.  $\pm 5\%$   
c.  $\pm 10\%$   
d.  $\pm 8\%$
99. Frequency response of signal generator under normal conditions [12D02]  
a. **with in  $\pm 1$  dB**  
b.  $\pm 2$  dB  
c.  $\pm 5$  dB  
d.  $\pm 10$  dB
100. The total hormanic distortion (or) factor \_\_\_\_\_ [12M01]  
a. **WWW.JNTUBITS.COM**  
b.  
c.  
d.
- 101.(i) The basic wave analyzer consists of a primary detector, which is a simple Lc circuit  
(ii) This LC circuit is adjusted for resonance at the frequency of the particular harmonic component to the measured [12M02]  
a. (i), (ii) are wrong  
b. (i) is wrong, (ii) is right  
c. **(i), (ii) are right**  
d. (i) is Right, (ii) is wrong

102. The wave analyzers are tuned in range of [12M03]  
a. 20Hz - 20KHz  
b. **20KHz - 200KHz**  
c. 200 KHz - 2MHz  
d. 2MHz - 200MHz
103. \_\_\_\_\_ noise has a voltage specturn which is inversly proportional to the square root of frequency [12S01]  
a. **Pink noise**  
b. Black noise  
c. Usasi noise  
d. White noise
104. Basic wave analyzer uses a full wave rectifier, to obtain \_\_\_\_\_ of the input signal [12S02]  
a. **Average value**  
b. Rms value  
c. Square  
d. Double
105. The wave to be analysed is first passes through [12S03]  
a. **Attenuator**  
b. Selective amplifier  
c. Regulator  
d. single generator
106. The level range of hormanic analyzer using crystal filter from [13D01]  
a. **-90 dB to 32dB**  
b. 20dB to 40dB  
c. 40dB to 90dB  
d. 90dB o 180dB
107. Fundamental Hormanic D = \_\_\_\_\_ n  
**V = Amplitude of n th hormanic**  
**pn**  
**V = Fundamental wave Amplitude [13D02] p1**  
a.  
b.  
c.  
d.
108. RF Hetrodyne wave analyzer operates in the range of [13M01]  
a. 1 Hz to 990Hz  
b. **10KHz to 18MHz**  
c. 10KHz to 100 KHz  
d. 10Hz to 10KHz
109. Ordinary wave analyzers are useful for measurement in the \_\_\_\_\_ range only [13S01]  
a. **Audio frequency**  
b. Low frequency  
c. Radio frequency  
d. Very high frequency
110. Hormanic distrotrion is due to [13S02]  
a. Liner behaviour of circuit element  
b. **Non-linear behaviour of circuit element**  
c. Change in behaviour of circuit element due to change in temperature  
d. change in behaviour of circuit element due to change in environment
111. Periodic wave = \_\_\_\_\_ [13S03]  
a. DC Term+first hormanic - second Hormanic + Third hormanic + -----  
b. DC Term + first hormanic - second Hormanic - Third hormanic - -----  
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c. DC Term - first harmonic + second Harmonic + Third harmonic + -----

d. DC Term + first harmonic + second harmonic + Third Harmonic + -----

112. \_\_\_\_\_ Types of distortions occurs in push-pull amplifiers on account of incorrect bias levels [13S04]

a. Frequency distortion

b. Phase distortion

c. Cross-over distortion

d. Amplitude distortion

113. \_\_\_\_\_ Types of distortions occurs because the amplification factor of the amplifier is different for different frequencies [13S05]

a. Frequency distortion

b. Phase distortion

c. Cross-over distortion

d. Amplitude distortion

114. The RF Spectrum analysis covers a frequency range of [14D01]

a. 10 MHz to 40GHz

b. 10 kHz to 100kHz

c. 1 kHz to 10kHz

d. 100 kHz to 1MHz

115. Rms value of amplitude of fundamental wave is 100v and RMS value of amplitudes of all higher harmonics is 0.3v. Find the [14D02]

a. 0.3

b. 0.1

c. 3.33

d. 10

116. The signal amplitude is displayed verses frequency. These measurement are said to be in the \_\_\_\_\_ [14M01]

a. Amplitude Domain

b. Frequency domain

c. Phase domain

d. Power domain

117. Spectrum analyzer operates on the same principle of [14S01]

a. wave analyzer

b. amplitude analyzer

c. Frequency analyzer

d. Phase analyzer

118. For spectral display uses [14S02]

a. CRO

b. T.V

c. LCD

d. Digital display

119. The Heart of the oscilloscope [14S03]

a. Power supply Block

b. Vertical amplifier

c. Cathode ray Tube

d. Horizontal amplifier

120. It is not a part of CRT [14S04]

a. Vertical amplifier

b. Deflection plates

c. Electron gun

d. Fluorescent screen

121. If the distance of screen from a CRT to centre of deflection plates is 15cm. The length of deflection plates is 2cm, The distance between plates is 1cm and the

accelerating voltage is 500V, The deflection sensitivity [15D01]

a. 33.2 V/cm

b. 0.03 cm/V

c. 66.4 V/cm

d. 0.015 cm/v

122. The deflection of an electron beam on a CRT screen is 10mm. Suppose the preaccelerating anode voltage is halved and the potential between deflecting plates is doubled. The deflection of the electron beam will be [15D02]

a. 80mm

b. 40mm

c. 20 mm

d. 10 mm

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123. Deflection factor of a CRT is \_\_\_\_\_

Deflection factor: G

Deflection sensitivity: S [15D03]

a.

b. G=s

c. G=S 2

d.

124. The pre-accelerating anode and accelerating anode are connected to a common positive high voltage of about \_\_\_\_\_ [15M01]

a. 1350 V

b. 1200 V

c. 1500V

d. 2000V

125. The focusing anode is connected to a lower adjustable voltage of \_\_\_\_\_ [15M02]

a. 250v

b. 100v

c. 500v

d. 50v

126. The deflection sensitivity of CRT is [15M03]

a.

b.

c.

d.

127. The source of emission of electrons in a CRT is \_\_\_\_\_ [15S01]

a. Post-accelerating anode

b. P-n junction diode

c. Accelerating anode

d. a barium and strontium oxide coated cathode

128. CRO operates on \_\_\_\_\_ [15S02]

a. voltage

b. current

c. strain

d. pressure

129. A certain oscilloscope with 4cm by 4cm screen has its own speed output fed to its input at the x and y sensitivities are same. The oscilloscope will display a [16D01]

a. Triangular wave

b. Diagonal wave

c. Sine wave

d. Circle

130. The horizontal amplifier should be designed for : [16M01]

a. high frequency signals with a fast rise time

b. high amplitude signals with a slow rise time

c. high amplitude signals with a fast rise time

d. low amplitude signals with a fast time

**131. A vertical amplifier for a CRO can be designed for [16M02]**

- a. only a high gain
- b. only a broad band width
- c. constant gain time band width product
- d. only a low gain

**132. Which meter is suitable for the measurement of 10mV at 50mHz [16M03]**

- a. moving-iron voltmeter
- b. CRO
- c. VTVM
- d. Electrostatic Voltmeter

**133. The vertical amplifiers is the principle factor in determining the \_\_\_\_\_ and \_\_\_\_\_ of an oscilloscope [16S01]**

- a. Voltage, current
- b. Voltage, Bandwidth
- c. Power factor, current
- d. Bandwidth sensitivity

**134. Sensitivity expressed in terms of [16S02]**

- a. V/cm
- b. Cm/V
- c. V/Cm 2
- d. V-Cm

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**135. The relation between sensitivity of oscilloscope and gain of the vertical amplifier [16S03]**

- a. Sensitivity a (gain) 2
- b. Sensitivity a
- c. Sensitivity a gain
- d. Sensitivity a

**136. To minimize the loading of the circuit under test, the input impedance of a CRO [16S04]**

- a. be Low
- b. be high
- c. capacitive
- d. Match with the output impedance of the circuit

**137. If the bandwidth of an oscilloscope is given direct current to 10MHz, what is the fastest rise time a sine wave can have to be accurately reproduced by an instrument [17D01]**

- a.  $t = 20\text{ns}$  r b.  $t = 30\text{ns}$  r c.  $t = 35\text{ns}$  r d.  $t = 25\text{ns}$  r

**138. It is not a source of synchronization [17M01]**

- a. Internal
- b. External
- c. Triggered
- d. Line

**139. Synchronization can be accomplished by [17S01]**

- a. Triggerd sweep
- b. Attenuator
- c. Clipper
- d. Clampper

**140. An aquadag is used in a CRO to collect [17S02]**

- a. Primary electrons
- b. Secondary emission electrons
- c. Primary and secondary electrons
- d. Reflected electrons

**141. Post acceleration is needed in a CRO if the frequency of the signal is [17S03]**

- a. less than 1 mHz
- b. more than 1 MHz
- c. more than 10 MHz

d. more than 10Hz

**142. Verticle deflection plates also called [17S04]**

- a. X deflection plates
- b. Y deflection plates
- c. Z deflection plates
- d. V deflection plates

**143. In which sweep, A new sweep is started immediately after the previous sweep is terminated and circuit is not initiated by any external signal [17S05]**

- a. Driven sweep
- b. Triggered sweep
- c. Free running sweep
- d. Non sawTooth sweep

**144. In most cases, \_\_\_\_\_ sweep is used where the sweep is recurrent but triggered by the signal under test [17S06]**

- a. Driven sweep
- b. Triggered sweep
- c. Free running sweep
- d. Non sawtooth sweep

**145. P phosphor material is used for display in CRTs for [18D01] 1**

- a. Photographic applications
- b. Television applications
- c. General purpose application
- d. Special purpose applications

**146. The bandwidth of a CRO is from 0-20MHz. The fastest rise time a sine wave can have to be accurately reproduced by the instrument is [18D02]**

- a. 35 ns
- b. 35  $\mu\text{s}$
- c. 17.5 ns
- d. 0.175  $\mu\text{s}$

**147. In an oscilloscope when the unknown signal applied to the verticle plates is being**

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**synchronized with the sweep signal applied to horizontal plates, the pattern seen on the CRO screen moves towards right It mean that [18D03]**

- a. The frequency of the single is lower than that of the sweep signal
- b. The frequency of the signal is greater than that of the sweep signal
- c. The frequency of the signal is equal to frequency of sweep signal
- d. The frequency of signal is equal to square of sweep signal

**148. Intensity of the beam is varied by [18M01]**

- a. Focus control
- b. Intensity control
- c. Square wave
- d. Sawtooth wave

**149. Generally calibrating voltage has a \_\_\_\_ in CROS [18M02]**

- a. Sine wave
- b. Trangular wave
- c. Positioning control
- d. Calibration circuit

**150. When Two equal voltage of equal frequency by with 90 0 phase displacement are applied to a CRO, The Trace on the scren is [18S01]**

- a. Circle



- b. Parabole
- c. Sine wave
- d. Trangular wave

**151.If the two voltage are not equal and out of phase difference are applied to a CRO, The trace on the screen is [18S02]**

- a. Circle
- b. Ellipse**
- c. Parabola
- d. Sine wave

**152.A Lissajous pattern as shown in figure is observed on screen of a CRO when the voltage of frequencies f and f and applied to the x and y plates respectively f :f = x y x y [19D01]**

- a. 3:2
- b. 1:2**
- c. 2:3
- d. 2:1

**153.A Lissajous pattern as shown in figure is observed on screen of a CRO when the voltage of frequencies f and f and applied to the x and y plates respectively f :f = x y x y [19D02]**

- a. 3:2
- b. 1:2**
- c. 2:3
- d. 2:1

**154.\_\_\_\_\_ of a signal can be accurately measured by Lissajour pattern [19M01]**

- a. Frequency**
- b. Phase difference
- c. Measurement of voltage
- d. Measurement of current

**155.The secondary emission electrons are collected by an aqueous solution of graphite called \_\_\_\_\_ [19M02]**

- a. Graticule
- b. Aquadag**
- c. Astigmatism
- d. Focusing

**156.\_\_\_\_\_ is a grid of lines that serves as a scale when making time and amplitude measurement [19M03]**

- a. Graticule**
- b. Aquadag
- c. Astigmatism
- d. Focusing

**157.In modern oscilloscopes \_\_\_\_\_ is an additional focusing control [19S01]**

- a. Graticule
- b. Aquadag
- c. Astigmatism**
- d. Focus

**158.The focused beam of electrons strikes the \_\_\_\_\_ screen [19S02]**

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- a. Fluorescent screen**
- b. Glass screen
- c. Aluminium screen
- d. Plastic screen

**159.CRT stands for [19S03]**

- a. Cathode ray Transformer
- b. Cathode ray Transistor
- c. Cathode ray Tube**
- d. Cathode ray Terminal

**160.\_\_\_\_\_ CR has two seperate electron beams [19S04] o**

- a. Dual Beam**
- b. Dual Trace
- c. Multi input
- d. Simple CRO

**161.The deflection sensitivity of a CRT is given as 0.2mm/v. The voltage applier to the deflection plates for a deflection of 3 inches is [20D01]**

- a. 6**
- b. 15
- c. 381
- d. 375

**162.A Sinusoical waveform of 5kHz is applied to the vertical input of a free running oscilloscope. The horizontal swep speed is set to that of fully cycle takes 0.4 sec. The resulting display for one sweep of beam is [20D02]**

- a. a saw tooth
- b. a sine wave
- c. Two cycles of the input signal**
- d. 12.5 kHz

**163.The sine waves of same amplitude and phase are applied to the verticle and Horizontal inputs of an oscilloscope. The pattern of the screen will be [20D03]**

- a.
- b.
- c.**
- d.

**164.For a Lissajous pattern shown in fig, find out the frequency of vertical signal if the frequency of Horizontal signal is 3kHz [20G01]**

- a. 7.5 kHz**
- b. 10KHz
- c. 15kHz
- d. 5kHz

**165.The input resistance of CRO is of the order of [20S01]**

- a. Tens of ohm
- b. Megohm**
- c. Kilo ohm
- d. Fraction of an ohm

**166.Which material has fluorescence characterstic [20S02]**

- a. Carbon
- b. Phosphor**
- c. Al
- d. Ge

**167.The focus adjustment of an oscillograph varies [20S03]**

- a. The grid voltage of CRT
- b. The filament voltage
- c. Second anode voltage**
- d. The accelerating voltage

**168.Lissajous pattnor are used to measure [20S04]**

- a. voltage and frequency
- b. frequency and phase**
- c. frequency and amplitude distortion
- d. amplitude and flux

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