

Online Examinations (Even Sem/Part-I/Part-II Examinations 2020 - 2021)

Course Name - --Analog Electronics II

Course Code - DECE402

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Answer all the questions. Each question carry one mark.

9. 1. Oscillators are used to _____ AC voltage

Mark only one oval.

- Prevent
- Generate
- Amplify
- Rectify

10. 2. What is the disadvantage of binary weighted type DAC?

Mark only one oval.

- Require wide range of resistors
- High operating frequency
- High power consumption
- Slow switching

11. 3. The output waveform of a stable oscillator have _____

Mark only one oval.

- Constant frequency at low amplitude only
- Constant frequency at high amplitude only
- Variable frequency
- Constant frequency

12. 4. An active device is one which _____

Mark only one oval.

- Mechanically controls electron flow
- Electrically controls electron flow
- Pneumatically controls electron flow
- Automatically controls electron flow

13. 5. Which of the following is not considered for quiescent operating point?

Mark only one oval.

- DC collector-emitter voltage
- DC collector current
- DC base current
- DC input voltage

14. 6. What is the duty cycle of the output of an astable multivibrator?

Mark only one oval.

- 50%
- 100%
- 75%
- 55%

15. 7. Oscillator _____ an AC input for giving an AC output.

Mark only one oval.

- Doesn't need
- Need
- Doesn't need at lower frequencies
- Doesn't need at higher frequencies

16. 8. Total phase shift provided by all phase shift networks in RC phase shift oscillator is _____

Mark only one oval.

- 180 degrees
 60 degrees
 120 degrees
 360 degrees

17. 9. Capacitive circuit configuration in Colpitts oscillator improves _____

Mark only one oval.

- Frequency stability
 Impedance
 Bulkiness
 Appearance

18. 10. Astable multivibrator is _____ in any state.

Mark only one oval.

- Stable
 Unstable
 Saturated
 Both Stable & Saturated

19. 11. The open loop voltage gain of an ideal OPAMP has

Mark only one oval.

- unity
- small
- infinite
- none of these

20. 12. Relaxation oscillators are also known as _____

Mark only one oval.

- Multivibrator
- Phase shift oscillators
- Blocking oscillators
- Saw tooth generator

21. 13. The series capacitance in the equivalent circuit of crystal oscillator represents _____

Mark only one oval.

- Inter electrode capacitance
- Compliance
- Viscous factor
- Mass

22. 14. Which component of Colpitts oscillator is used in feedback system?

Mark only one oval.

- Inductor
- Resistor
- Capacitor
- Transistor

23. 15. Which one of the following is false with respect to stray capacitance?

Mark only one oval.

- Reduces with decrease in size of lead wires
- Reduces when chip capacitors are used
- Increases when lead wires are lengthy
- Increases with less capacitance value

24. 16. Example for a self-limiting oscillator is _____

Mark only one oval.

- Hartley oscillator
- Weinbridge Oscillator
- RC phase shift oscillator
- Astable multivibrator

25. 17. Mention the technique used in photolithography process

Mark only one oval.

- X-ray lithographic technique
- Ultraviolet lithographic technique
- Electron beam lithographic technique
- All of these

26. 18. At the resonant frequency, what is the phase shift for the output in a Wien Bridge oscillator?

Mark only one oval.

- 0°
- 45°
- 90°
- 180°

27. 19. Crystal frequency characteristics depends on _____

Mark only one oval.

- Inductive reactance connected to crystal
- Capacitive reactance connected to crystal
- Shape of crystal
- All of the mentioned

28. 20. What is reactance?

Mark only one oval.

- Resistance offered to ac current by resistor only
- Resistance offered to dc current by resistor
- Resistance offered to ac current by coil and capacitance
- Resistance offered to dc current by coil and capacitance

29. 21. Given that CMRR is 100dB. Input common-mode voltage is 12 V. Differential voltage gain is 4000. Calculate output common-mode voltage.

Mark only one oval.

- 48V
- 0.48V
- 20V
- 11V

30. 22. In which configuration a dead band condition occurs in schmitt trigger

Mark only one oval.

- Differential amplifier with positive feedback
- Voltage follower with positive feedback
- Comparator with positive feedback
- None of these

31. 23. How can a monostable multivibrator using IC 555 be used as a PWM generator?

Mark only one oval.

- If a diode is connected across the resistor RA
- If a modulating signal $m(t)$ is applied at the control pin
- If the control pin is always kept high
- It cannot be used as a PWM generator ever

32. 24. To overcome the problem of representation of large values of gain, which of the following units was introduced?

Mark only one oval.

- Decibels
- Joules
- Pascals
- Farads

33. 25. Which of the following is not true regarding the output capacitor in the transistor biasing circuit?

Mark only one oval.

- To pass AC signal
- To stop DC signal
- To couple the amplifier to load or next amplifier
- There is no importance for an output capacitance

34. 26. Negative resistance are incorporated in oscillator for _____

Mark only one oval.

- Sustained oscillation
- Damped oscillation
- Biasing the oscillator
- Increasing amplitude of oscillation

35. 27. Which of among the following circuit is considered to be linear?

Mark only one oval.

- Weighted Resistor type DAC
- R-2R ladder type DAC
- Inverter R-2R ladder DAC
- All of these

36. 28. A practical op-amp has a bandwidth of only 10 Hz. Gain is 10^6 , and the required bandwidth is 100 kHz. How much feedback is required?

Mark only one oval.

- 0.99% negative feedback
- 0.99% positive feedback
- 1% negative feedback
- 1% positive feedback

37. 29. Which of the following elements comprise of the passive devices?

Mark only one oval.

- Resistors, Capacitors and SCRs
- Vacuum Tubes, SCRs and Diodes
- Transformers, Inductors and Diodes
- Transformers, TRIACs and DIACs

38. 30. What is the role of input capacitance in the transistor amplifying circuit?

Mark only one oval.

- To prevent input variation from reaching output
- To prevent DC content in the input from reaching transistor
- There isn't any role for input capacitance
- To increase input impedance

39. 31. Astable multivibrator operating at 150Hz has a discharge time of 2.5m. Find the duty cycle of the circuit.

Mark only one oval.

- 50%
- 75%
- 95.99%
- 37.5%

40. 32. For accomplishing negative resistance in oscillator we use _____

Mark only one oval.

- Voltage divider circuit
- Negative feedback
- Positive feedback
- Current divider circuit

41. 33. Which of the following is not true for an RC phase shift oscillator?

Mark only one oval.

- Not Bulky
- Less costly
- Effective for oscillation less than 10KHz
- Pure sine wave output is possible

42. 34. RFC choke present in Collpitts oscillatory circuit is for _____

Mark only one oval.

- High reactance to oscillation
- Low reactance to oscillation
- Variable reactance to oscillation
- Biasing to oscillation

43. 35. Bistable multivibrator is _____ in any state.

Mark only one oval.

- Stable
- Unstable
- Saturated
- Independent

44. 36. Measure of sensitivity of crystal oscillator output frequency to supply voltage is called _____

Mark only one oval.

- Frequency pulling
- Frequency ratio
- Output ratio
- Frequency pushing

45. 37. Oscillation can be classified as damped and sustained on the basis of varying.

Mark only one oval.

- Input power
- Frequency
- Amplitude
- Noise margin

46. 38. When frequency of oscillation of a crystal oscillator becomes parallel resonance frequency reactance of crystal oscillator becomes _____

Mark only one oval.

- Zero
- Infinity
- Unpredictable
- Unity

47. 39. Which of the following network is used to give feedback to transistor?

Mark only one oval.

- Inductive fixed bias
- Capacitive fixed bias
- Inductive voltage divider
- Capacitive voltage divider

48. 40. What is the inductive reactance of a 40- μ H coil at 18 MHz?

Mark only one oval.

- 4000 Ω
- 4522 Ω
- 4522H
- 0

49. 41. Which of the following effect illustrate basic working of a quartz crystal oscillator?

Mark only one oval.

- Photovoltaic effect
- Piezo electric effect
- Electro-magnetic effect
- Electron excitation effect

50. 42. Which of the following is not an LC oscillator?

Mark only one oval.

- Hartley Oscillator
- Colpitts oscillator
- Crystal oscillator
- Clapp oscillator

51. 43. Which of the following are not the characteristics of a crystal oscillator?

Mark only one oval.

- Highly stable with time
- Highly stable with temperature
- Highly selective
- Frequency depends external resistors and capacitors

52. 44. The measure of frequency change due to non-ideal load is called _____

Mark only one oval.

- Frequency pulling
- Frequency ratio
- Output ratio
- Frequency pushing

53. 45. What happens to the current when it passes through a capacitor?

Mark only one oval.

- Phase of voltage leads the current
- Phase of current leads the voltage
- Phase of current and voltage cancel out each other
- Phase of current and voltage gets added

54. 46. RC phase shift oscillators contain a minimum of _____ Phase shift network.

Mark only one oval.

- 1
- 2
- 3
- 0

55. 47. Depending on the value of input and reference voltage a comparator can be named as

Mark only one oval.

- Voltage follower
- Digital to analog converter
- Schmitt trigger
- Voltage level detector

56. 48. Frequency of oscillation of alternator is _____

Mark only one oval.

- 100Hz
- 50Hz
- 1KHz
- 200Hz

57. 49. Tunnel diode can be used as an active device because _____

Mark only one oval.

- its negative resistance region is used
- it conducts at a faster rate
- it triggers the flow of electrons in reverse bias
- of tunneling effect

58. 50. Which is an external sorting algorithm?

Mark only one oval.

- emitter bias
- voltage divider bias
- fixed bias
- collector feedback bias

59. 51. The output of a stable oscillator have _____

Mark only one oval.

- Constant amplitude
- Varying amplitude
- Constant amplitude at high frequencies only
- Constant amplitude at low frequencies only

60. 52. Which among the following can be used to detect the missing heart beat?

Mark only one oval.

- Monostable multivibrator
- Astable multivibrator
- Schmitt trigger
- None of these

61. 53. What is incorrect regarding the output offset voltage of op-amp?

Mark only one oval.

- It is the output when the input voltage at both input pins of op-amp is zero
- It occurs due to dissimilarities in the internal structure of the op-amp
- The output offset voltage does not depend on the supply voltage
- The output offset voltage can be in the units of Volts

62. 54. A transistor is a current controlled device because _____

Mark only one oval.

- In the base region movement of charge carrier is because of the electrons which are minority charge carrier in the base region
- In the collector region movement of charge carrier is because of the electrons which are minority charge carrier in the collector region
- In the base region movement of charge carrier is because of the holes which are majority charge carrier in the base region
- In the collector region movement of charge carrier is because of the holes which are majority charge carrier in the base region

63. 55. What is the role of emitter bypass capacitance in the transistor amplifying circuit?

Mark only one oval.

- To prevent damage of emitter resistance from variation in voltage
- To prevent emitter from over voltage
- To increase gain
- To increase load to transistor circuit

64. 56. Why the switches used in weighted resistor DAC are of single pole double throw (SPDT) type?

Mark only one oval.

- To connect the resistance to reference voltage
- To connect the resistance to ground
- To connect the resistance to either reference voltage or ground
- To connect the resistance to output

65. 57. Primary trigger for oscillation is obtained from _____

Mark only one oval.

- DC voltage
- Noise voltage
- External trigger voltage
- No trigger is required

66. 58. What will be oscillator frequency, if phase shift network of 3stages of RC phase shift oscillator contains a capacitor of 7nF and a resistance of 10K in each stage?

Mark only one oval.

- 928 Hz
- 1KHz
- 1.2KHz
- 895Hz

67. 59. Resistors are provided in Colpitts circuit is to _____

Mark only one oval.

- Provide high impedance to oscillation
- Bias transistor
- Provide stability for tank circuit
- Increase impedance for oscillation

68. 60. In an astable multivibrator, the amplifying elements are _____

Mark only one oval.

- FET
- JFET
- OP-AMP
- All of the Mentioned

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