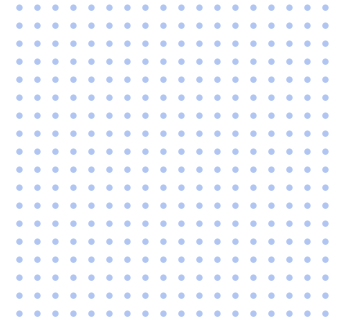




FOR KUET EXAM PREPARATION

KUET 2024 Question Paper · M.Sc. Electronics

EXAM	YEAR	TYPE	SUBJECT
KUET	2024	Question Paper	M.Sc. Electronics

099

Sr. No.

ENTRANCE TEST-2024**SCHOOL OF APPLIED SCIENCES AND TECHNOLOGY****ELECTRONICS**

Question Booklet Series

C

Total Questions : 60

Time Allowed : 70 Minutes

Roll No. :

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Instructions for Candidates :

1. Write your Entrance Test Roll Number in the space provided at the top of this page of Question Booklet and fill up the necessary information in the spaces provided on the OMR Answer Sheet.
2. OMR Answer Sheet has an Original Copy and a Candidate's Copy glued beneath it at the top. While making entries in the Original Copy, candidate should ensure that the two copies are aligned properly so that the entries made in the Original Copy against each item are exactly copied in the Candidate's Copy.
3. All entries in the OMR Answer Sheet, including answers to questions, are to be recorded in the Original Copy only.
4. Choose the correct / most appropriate response for each question among the options A, B, C and D and darken the circle of the appropriate response completely. The incomplete darkened circle is not correctly read by the OMR Scanner and no complaint to this effect shall be entertained.
5. Use only blue/black ball point pen to darken the circle of correct/most appropriate response. In no case gel/ink pen or pencil should be used.
6. Do not darken more than one circle of options for any question. A question with more than one darkened response shall be considered wrong.
7. There will be '**Negative Marking**' for wrong answers. Each wrong answer will lead to the deduction of 0.25 marks from the total score of the candidate.
8. Only those candidates who would obtain positive score in Entrance Test Examination shall be eligible for admission.
9. Do not make any stray mark on the OMR sheet.
10. Calculators and mobiles shall not be permitted inside the examination hall.
11. Rough work, if any, should be done on the blank sheets provided with the question booklet.
12. OMR Answer Sheet must be handled carefully and it should not be folded or mutilated in which case it will not be evaluated.
13. Ensure that your OMR Answer Sheet has been signed by the Invigilator and the candidate himself/herself.
14. At the end of the examination, hand over the OMR Answer Sheet to the invigilator who will first tear off the original OMR sheet in presence of the Candidate and hand over the Candidate's Copy to the candidate.

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1. An astable multivibrator has _____.
 (A) two stable states
 (B) one stable state
 (C) no stable state
 (D) one metastable state
2. An SCR can be turned off by :
 (A) forced commutation
 (B) a negative pulse on the gate
 (C) decreasing anode current below holding current
 (D) options (A) and (C)
3. A triac is equivalent to two SCRs _____.
 (A) in parallel
 (B) in series
 (C) in inverse-parallel
 (D) none of the above
4. The intrinsic stand-off ratio (η) of a UJT is given by _____.
 (A) $\frac{R_{B1}}{R_{B1} + R_{B2}}$
 (B) $R_{B1} + R_{B2}$
 (C) $\frac{R_{B1} + R_{B2}}{R_{B1}}$
 (D) $\frac{R_{B1} + R_{B2}}{R_{B2}}$
5. The diode associated with voltage-controlled capacitance is _____.
 (A) LED
 (B) photo-diode
 (C) varactor diode
 (D) Zener diode
6. Using De-Morgan's laws, $\overline{AB + AB}$ can be written as :
 (A) $AB + A\overline{B}$
 (B) $\overline{AB} + \overline{AB}$
 (C) $\overline{A + B} + \overline{A + B}$
 (D) $\overline{AB} \cdot \overline{AB}$
7. BCD representation of 65 is :
 (A) 1000 0101
 (B) 0110 0101
 (C) 1000 0001
 (D) 1001 0101
8. The logic function $A + AB$ is the same as :
 (A) A
 (B) AB
 (C) $\overline{A} + B$
 (D) $A + \overline{B}$
9. The hexadecimal equivalent of the decimal number $(700)_{10}$ is :
 (A) 2BC
 (B) 2AC
 (C) 2AB
 (D) 1AC3
10. The logic family with high speed is :
 (A) TTL
 (B) CMOS
 (C) DTL
 (D) ECL

11. ASCII stands for :
- American Standard Code for Information Interchange
 - American System Code for Information Interchange
 - American System Code for International Information
 - American Standard Code for International Interchange
12. An XOR gate is a _____.
- basic gate
 - derived gate
 - universal gate
 - equivalent to NOR gate
13. JK FF can be transformed into T FF by :
- Tying J and K
 - Inverting J
 - Inverting K
 - None of these
14. The number of FFs required to design Modulo-6 counter is :
- 6
 - 3
 - 2
 - 4
15. 1K bytes of memory is equal to :
- 1000 bytes
 - 1024 bytes
 - 1008 bytes
 - 1012 bytes
16. If the μp has address bus of 13 bit wide and hence the memory which can be accessed by this address bus is :
- 2K bytes
 - 6K bytes
 - 8K bytes
 - 16K bytes
17. In a microprocessor, the address of the next instruction to be executed, is stored in :
- Stack pointer
 - Address latch
 - Program counter
 - General purpose register
18. JZ 2034H in 8085 μp is a :
- Data transfer instruction
 - Branching instruction
 - Control instruction
 - Machine instruction
19. Which of the following uses immediate addressing mode ?
- JMP 3333H
 - MOV A, B
 - MVIA, 50
 - MOV A, 2050H
20. Which one of the following is the non-maskable interrupt in 8085 ?
- TRAP
 - RST 7.5
 - RST 6.5
 - INTR

21. The main purpose of accumulator register of 8085 is _____.
 (A) selection of peripheral
 (B) temporary data storage
 (C) storing instructions
 (D) that it is used as primary pointer
22. Which of the following flags is set to 1 when there is even number of 1 bits in the result and to 0 when there is odd number of 1 bits in the result ?
 (A) Parity Flag
 (B) Zero Flag
 (C) Trap Flag
 (D) Sign Flag
23. At 100% modulation, the power in each sideband is _____ of that of carrier.
 (A) 50%
 (B) 40%
 (C) 60%
 (D) 25%
24. The major advantage of FM over AM is _____.
 (A) reception is less noisy
 (B) higher carrier frequency
 (C) smaller bandwidth
 (D) small frequency deviation
25. If a radio receiver amplifies all the signal frequencies equally well, it is said to have high _____.
 (A) sensitivity
 (B) selectivity
 (C) distortion
 (D) fidelity
26. In FM, modulation index β is equal to (Δf is the frequency deviation and f_m is the modulating signal frequency).
 (A) $\Delta f \cdot f_m$
 (B) $\frac{\Delta f}{f_m}$
 (C) $\frac{f_m}{\Delta f}$
 (D) $\frac{1}{\Delta f \cdot f_m}$
27. Analog Modulation scheme with lesser bandwidth requirement is :
 (A) AM
 (B) DSBSC
 (C) SSBSC
 (D) VSB
28. In a radio receiver, noise is generally developed at _____.
 (A) IF stage
 (B) receiving antenna
 (C) audio stage
 (D) RF stage
29. In TV transmission, picture signal is _____ modulated.
 (A) frequency
 (B) phase
 (C) amplitude
 (D) none of the above
30. A signal with highest frequency of 10 kHz can be faithfully recovered from its sampled version if the sampling frequency is _____.
 (A) Greater or equal to 20 kHz
 (B) Greater than 10 kHz and less than 20 kHz
 (C) Greater than 5 kHz and less than 10 kHz
 (D) Equal to 10 kHz

31. 1's and 0's are represented by two different frequencies in :
 (A) ASK
 (B) PSK
 (C) FSK
 (D) DPSK
32. The error in PCM can be reduced by :
 (A) decreasing the number of quantization levels
 (B) increasing the number of quantization levels
 (C) increasing the sampling frequency
 (D) decreasing sampling frequency
33. The evolution of cell phone standards are from 1G to 5G, what this G indicates ?
 (A) Gross
 (B) Generation
 (C) General
 (D) Gap
34. Which system allows the entire bandwidth to be available to each user at the same time ?
 (A) CSMA
 (B) GSM
 (C) CDMA
 (D) FDMA
35. The main objective of a cell in a cellular mobile system is :
 (A) Handoff
 (B) Simple modulation technique
 (C) Frequency reuse
 (D) Higher bandwidth
36. The spring material used in a spring control device should have the following property :
 (A) Should be non-magnetic
 (B) Must be of low temperature co-efficient
 (C) Should have low specific resistance
 (D) All of the above
37. In an Anderson Bridge, the unknown inductance is measured in terms of :
 (A) known inductance and resistance
 (B) known capacitance and resistance
 (C) known resistance
 (D) known inductance
38. For measurement of inductance having high value, we should use :
 (A) Hay's bridge
 (B) Maxwell's bridge
 (C) Maxwell Wien bridge
 (D) None of the above
39. The horizontal plates of a CRO are supplied with _____ to observe the waveform of a signal.
 (A) sinusoidal wave
 (B) cosine wave
 (C) sawtooth wave
 (D) square wave
40. Function generators generally give _____.
 (A) sinusoidal wave
 (B) triangular wave
 (C) square wave
 (D) all of the above

41. The energy band in which holes exist is the :
 (A) First band
 (B) Second band
 (C) Conduction band
 (D) Valence band
42. Electron hole pairs are produced by :
 (A) Thermal Excitation
 (B) Optical Excitation
 (C) Excitation by Ionizing Radiation
 (D) All of the above
43. The average value of half-wave rectified voltage with a peak value of 290V is :
 (A) 92.32V
 (B) 46.15V
 (C) 145V
 (D) 205V
44. A certain regulator has a no-load voltage of 6V and a full-load output of 5.82V. What is the load regulation ?
 (A) 3.09 %
 (B) 2.87 %
 (C) 5.72 %
 (D) 9.03 %
45. The lowest stability factor is for :
 (A) base resistor transistor biasing method
 (B) collector feedback transistor biasing method
 (C) voltage divider transistor biasing method
 (D) emitter bias method of transistor biasing
46. Emitter follower is used for _____.
 (A) current gain
 (B) impedance matching
 (C) voltage gain
 (D) none of the above
47. When drain voltage equals the pinch-off voltage, then drain current _____ with the increase in drain voltage.
 (A) decreases
 (B) increases
 (C) remains constant
 (D) first increases then decreases
48. A MOSFET has _____ terminals.
 (A) Three
 (B) Two
 (C) Four
 (D) Five
49. Efficiency at maximum power transfer is _____.
 (A) 75%
 (B) 25%
 (C) 90%
 (D) 50%
50. A resonant circuit contains _____ elements.
 (A) R and L
 (B) R and C
 (C) only R
 (D) L and C

51. Which of the following filters has maximum gain at center /cut-off frequency ?
- A lowpass filter
 - A highpass filter
 - A bandpass filter
 - A bandstop filter
52. The quality factor of a coil _____.
- decreases with the increase in input frequency
 - increases with the increase in inductance of coil
 - increases with the increase in the resistance of coil
 - remains constant with the increase in the resistance of coil
53. The maximum efficiency of transformer coupled class A power amplifier is _____.
- 30%
 - 50%
 - 80%
 - 45%
54. Crossover distortion is a problem for :
- Class A amplifiers
 - Class AB amplifiers
 - Class B amplifiers
 - All of these amplifiers
55. In a phase shift oscillator, the frequency determining elements are _____.
- L and C
 - R, L and C
 - R and C
 - R and L
56. In a certain oscillator, $A_v = 50$. The attenuation of the feedback circuit must be _____.
- 1
 - 0.02
 - 0.01
 - 10
57. If $A_{DM} = 200000$ and $A_{CM} = 0.2$, the CMRR is :
- 2,00,000
 - 10,00,000
 - 120 dB
 - Options (B) and (C)
58. A non-inverting amplifier with feedback resistor $R_f = 99 \text{ k}\Omega$ and series resistor $R_1 = 1 \text{ k}\Omega$ has gain of _____.
- 99
 - 100
 - 1
 - 98
59. If the input of the integrator is a square wave signal, the output will be _____.
- a square wave signal
 - a sinusoidal wave signal
 - series of positive and negative spikes
 - a triangular wave
60. An Op-amp has _____.
- high input impedance
 - low CMRR
 - high noise at the output
 - large input current