Test Booklet Code & Serial No.
प्रश्नपत्रिका कोड व क्रमांक

A

Paper-II
ELECTRONIC SCIENCE

Signature and Name of Invigilator

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OMR Sheet No. | | | | | | | |

(To be filled by the Candidate)

JUN - 38225

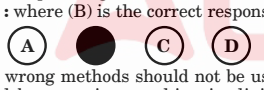
Time Allowed : 2 Hours] **[Maximum Marks : 200**

Number of Pages in this Booklet : **28**

Number of Questions in this Booklet : **100**

Instructions for the Candidates

1. Write your Seat No. and OMR Sheet No. in the space provided on the top of this page.
2. This paper consists of **100** objective type questions. Each question will carry *two* marks. *All* questions of Paper II will be compulsory.
3. At the commencement of examination, the question booklet will be given to the student. In the first 5 minutes, you are requested to open the booklet and compulsorily examine it as follows :
   (*i*) To have access to the Question Booklet, tear off the paper seal on the edge of this cover page. Do not accept a booklet without sticker-seal or open booklet.
   (*ii*) Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faulty booklets due to missing pages/questions or questions repeated or not in serial order or any other discrepancy should not be accepted and correct booklet should be obtained from the invigilator within the period of 5 minutes. Afterwards, neither the Question Booklet will be replaced nor any extra time will be given. The same may please be noted.
   (*iii*) After this verification is over, the OMR Sheet Number should be entered on this Test Booklet.
4. Each question has four alternative responses marked (A), (B), (C) and (D). You have to darken the circle as indicated below on the correct response against each item.
   Example : where (B) is the correct response.



Following wrong methods should not be used as they are not recognised by scanning machine in digitized assessment. Candidate using such method will be responsible for their loss.

5. Your responses to the items are to be indicated in the **OMR Sheet given inside the Booklet only.** If you mark at any place other than in the circle in the OMR Sheet, it will not be evaluated.
6. Read instructions given inside carefully.
7. Rough Work is to be done at the end of this booklet.
8. If you write your Name, Seat Number, Phone Number or put any mark on any part of the OMR Sheet, except for the space allotted for the relevant entries, which may disclose your identity, or use abusive language or employ any other unfair means, you will render yourself liable to disqualification.
9. You have to return original OMR Sheet to the invigilator at the end of the examination compulsorily and must not carry it with you outside the Examination Hall. You are, however, allowed to carry the Test Booklet and duplicate copy of OMR Sheet on conclusion of examination.
10. Use only Blue/Black Ball point pen.
11. Use of any calculator or log table, etc., is prohibited.
12. There is no negative marking for incorrect answers.

विद्यार्थ्यांसाठी महत्त्वाच्या सूचना

1. परीक्षार्थींनी आपला आसन क्रमांक या पृष्ठावरील वरच्या कोपऱ्यात लिहावा. तसेच आपणांस दिलेल्या उत्तरपत्रिकेचा क्रमांक त्याखाली लिहावा.
2. सदर प्रश्नपत्रिकेत 100 बहुपर्यायी प्रश्न आहेत. प्रत्येक प्रश्नास **दोन** गुण आहेत. या प्रश्नपत्रिकेतील **सर्व** प्रश्न सोडविणे अनिवार्य आहे.
3. परीक्षा सुरू झाल्यावर विद्यार्थ्याला प्रश्नपत्रिका दिली जाईल. सुरुवातीच्या 5 मिनिटांमध्ये आपण सदर प्रश्नपत्रिका उघडून खालील बाबी अवश्य तपासून पहाव्यात.
   (*i*) प्रश्नपत्रिका उघडण्यासाठी प्रश्नपत्रिकेवर लावलेले सील उघडावे. सील नसलेली किंवा सील उघडलेली प्रश्नपत्रिका स्वीकारू नये.
   (*ii*) पहिल्या पृष्ठावर नमूद केल्याप्रमाणे प्रश्नपत्रिकेची एकूण पृष्ठे तसेच प्रश्नपत्रिकेतील एकूण प्रश्नांची संख्या पडताळून पहावी. पृष्ठे कमी असलेली/कमी प्रश्न असलेली/प्रश्नांचा चुकीचा क्रम असलेली किंवा इतर त्रुटी असलेली सदोष प्रश्नपत्रिका सुरुवातीच्या 5 मिनिटातच पर्यवेक्षकाला परत देऊन दुसरी प्रश्नपत्रिका मागवून घ्यावी. त्यानंतर प्रश्नपत्रिका बदलून मिळणार नाही तसेच वेळही वाढवून मिळणार नाही याची कृपया विद्यार्थ्यांनी नोंद घ्यावी.
   (*iii*) वरीलप्रमाणे सर्व पडताळून पाहिल्यानंतरच प्रश्नपत्रिकेवर ओ.एम.आर. उत्तरपत्रिकेचा नंबर लिहावा.
4. प्रत्येक प्रश्नासाठी (A), (B), (C) आणि (D) अशी चार विकल्प उत्तरे दिली आहेत. त्यातील योग्य उत्तराचा रकाना खाली दर्शविल्याप्रमाणे ठळकपणे काळ्या/निळ्या करावा.
   उदा. : जर (B) हे योग्य उत्तर असेल तर.

खालील चुकीच्या पद्धती वापरू नये, कारण डिजिटाइज्ड (Digitized) मूल्यांकनात स्कॅनिंग मशीन त्यांना ओळखत नाही. त्या पद्धती वापरून नुकसान झाल्यास त्यास विद्यार्थीच जबाबदार असतील.

5. या प्रश्नपत्रिकेतील प्रश्नांची उत्तरे **ओ.एम.आर. उत्तरपत्रिकेतच दर्शवावीत.** इतर ठिकाणी लिहिलेली उत्तरे तपासली जाणार नाहीत.
6. आत दिलेल्या सूचना काळजीपूर्वक वाचाव्यात.
7. प्रश्नपत्रिकेच्या शेवटी जोडलेल्या कोऱ्या पानावरच कच्चे काम करावे.
8. जर आपण ओ.एम.आर. वर नमूद केलेल्या ठिकाणाव्यतिरिक्त इतर कोठेही नाव, आसन क्रमांक, फोन नंबर किंवा ओळख पटेल अशी कोणतीही खूण केलेली आढळून आल्यास अथवा असभ्य भाषेचा वापर किंवा इतर गैरमार्गांचा अवलंब केल्यास विद्यार्थ्याला परीक्षेस अपात्र ठरविण्यात येईल.
9. परीक्षा संपल्यानंतर विद्यार्थ्याने मूळ ओ.एम.आर. उत्तरपत्रिका पर्यवेक्षकांकडे परत करणे आवश्यक आहे. तथापि, प्रश्नपत्रिका व ओ.एम.आर. उत्तरपत्रिकेची द्वितीय प्रत आपल्याबरोबर नेण्यास विद्यार्थ्यांना परवानगी आहे.
10. फक्त निळ्या किंवा काळ्या बॉल पेनचाच वापर करावा.
11. कॅलक्युलेटर किंवा लॉग टेबल वापरण्यास परवानगी नाही.
12. चुकीच्या उत्तरासाठी गुण कपात केली जाणार नाही.

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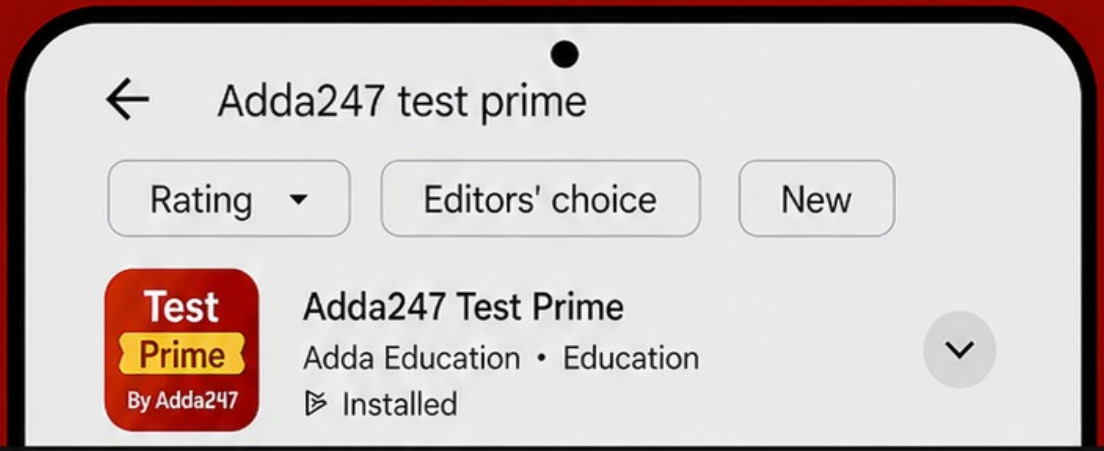

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JUN - 38225/II—A

Electronic Science
Paper II

Time Allowed : 120 Minutes] **[Maximum Marks : 200**

Note : This Paper contains **Hundred (100)** multiple choice questions. Each question carrying **Two (2)** marks. Attempt *All* questions.

1. In the semiconductors, what is the role of a *doping* ?

(A) It increases the bandgap of the semiconductor material

(B) It introduces impurities to modify the electrical properties of the material

(C) It enhances the thermal conductivity of the semiconductor

(D) It decreases the resistivity of the semoconductor material

2. In semiconductor manufacturing, what does the term *wafer* refer to ?

(A) A thin slice of single-crystal semiconductor material

(B) The metallic layer on top of a semiconductor device

(C) The insulation material between different semiconductor layers

(D) The encapsulation material used in semiconductor packaging

3. In a Zener diode, what is the primary role of the depletion region ?

(A) To increase the forward bias current

(B) To provide mechanical support to the diode

(C) To enhance the reverse breakdown voltage

(D) To reduce the capacitance of the diode

4. How does an LCD pixel control the passage of light to create different colors ?

(A) By changing the pixel's size

(B) By altering the liquid crystal alignment

(C) By adjusting the backlight intensity

(D) By using a color filter

5. What is the primary role of barrier layers in quantum well devices ?

(A) To increase carrier concentration

(B) To enhance thermal conductivity

(C) To confine charge carriers in one dimension

(D) To reduce the overall device size

6. In the I-V curve of a solar cell, what does the open-circuit voltage (V_{oc}) represent ?

(A) The maximum voltage the cell can generate under illumination

(B) The voltage when the cell is not exposed to light

(C) The voltage when the current is zero

(D) The voltage when the cell is at maximum power point

7. What is the significance of the "quantum Hall effect" observed in graphene ?

(A) It indicates the presence of a bandgap in graphene

(B) It demonstrates the unique behavior of charge carriers in graphene

(C) It signifies the low thermal conductivity of graphene

(D) It is unrelated to the electronic properties of graphene

8. What is the unique structural feature of a carbon nanotube that contributes to its exceptional strength ?

(A) Planar hexagonal lattice

(B) Rolling vector

(C) Quasi-one-dimensional structure

(D) Hexagonal Closed Packed Structure

9. What are potential applications of ZnO in the field of optoelectronics ?

(A) Photovoltaic cells and light-emitting diodes (LEDs)

(B) Quantum computing devices

(C) Superconductors and magnetic storage

(D) Gas sensors and fuel cells

10. What is the primary advantage of LED technology over traditional incandescent lighting ?

(A) Higher power consumption

(B) Longer lifespan

(C) Limited color options

(D) Lower efficiency

11. In X-ray Diffractometers, line intensities depend on ..... and kind of atomic reflection centres in each set of plates.

(A) Number

(B) Position

(C) Length

(D) Distance between lines

12. A sharp peak in a X-Ray Diffractogram represents :

(A) Amorphous Material

(B) Polymeric Material

(C) Highly Crystalline Structure

(D) Conductor Material

13. The chemical used for shielding the active areas to achieve selective oxide growth is :

(A) Silver Nitride

(B) Silicon Nitride

(C) Hydrofluoric acid

(D) Polysilicon

14. The scaling factor of current density in constant voltage model is :

(A) $1/\alpha^2$

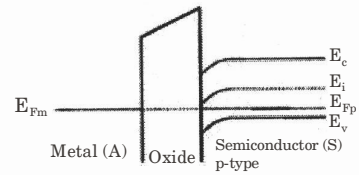
(B) 1

(C) α^2

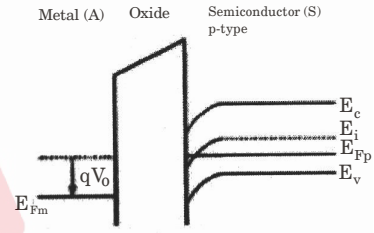
(D) α^2/β

15. The energy band diagram of the MOS system when gate voltage is zero is :

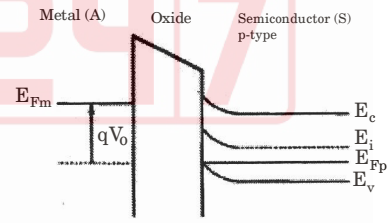
(A)



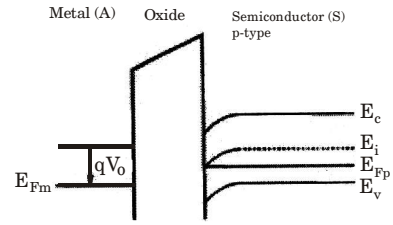
(B)



(C)



(D)



16. What is the Primary Function of the Shift Register in A CCD ?

(A) Data storage

(B) Serial transfer of charge

(C) Analog-to-digital conversion

(D) Image processing

17. Which of the following design styles provides higher integration density ?

(A) Switch transistor logic

(B) Transistor buffer logic

(C) Transistor transistor logic

(D) Circuit level logic

18. Which gives scalable design rules ?

(A) Lambda rules

(B) Micron rules

(C) Layer rules

(D) Thickness rules

19. Which of the following is used to obtain silicon single crystal structure while fabricating integrating circuits ?

(A) Oxidation

(B) Epitaxial growth

(C) Photolithography

(D) Silicon wafer preparations

20. The pull up to pull down impedance ratio for an nMOS inverter driven by another nMOS inverter is .....

(A) 8/1

(B) 4/1

(C) 8/3

(D) 1/4

21. What is the purpose of Norton's theorem ?

(A) Simplify parallel circuits

(B) Analyse AC circuits

(C) Calculate equivalent resistance

(D) Determine open-circuit voltage

22. Norton's equivalent current is in parallel with :

(A) A resistor

(B) A capacitor

(C) An inductor

(D) A voltage source

23. The Laplace transform of a unit impulse function is :

(A) 1/s

(B) e^{-st}

(C) $\delta(t)$

(D) 1

24. What does the term "cut-set" refer to in network analysis ?

(A) A set of parallel resistors

(B) A set of series resistors

(C) A combination of resistors and capacitors

(D) A set of branches that, if cut, will divide the network into two parts

25. In filter design, what is the purpose of the Butterworth approximation ?

(A) To achieve a maximally flat response in the passband

(B) To minimize phase distortion in the stopband

(C) To maximize the bandwidth of the filter

(D) To ensure equal ripple in both the passband and stopband

26. What does the term "poles and zeros cancellation" imply in control system theory ?

(A) It results in an unstable system

(B) It improves the transient response of the system

(C) It simplifies the transfer function of the system

(D) It reduces the order of the system

27. What is the purpose of the Routh-Hurwitz stability criterion ?

(A) To determine the stability of a control system

(B) To analyse power distribution in electrical grids

(C) To optimize the bandwidth of a communication system

(D) To design filters with optimal frequency response

28. In filter design, what is the significance of the transition bandwidth ?

(A) It represents the range of frequencies with equal ripple in the stopband

(B) It indicates the sharpness of the frequency transition between passband and stopband

(C) It is the range of frequencies over which the filter exhibits a maximally flat response

(D) It defines the frequency range in which the filter has minimal group delay

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30. The multiplication of two discrete Fourier transforms (DFTs) is equal to the ..... of two sequences in the time domain.

(A) Circular convolution

(B) Auto-correlation

(C) Linear convolution

(D) Cross-correlation

31. What does the symbol IGSS represent in the context of a JFET ?

(A) Drain current

(B) Gate-source voltage

(C) Gate current when the gate-source junction is forward-biased

(D) Gate current when the gate-source junction is reverse-biased

32. What information does the measurement of dc beta provide about a bipolar junction transistor ?

(A) Voltage drop across the collector resistor

(B) Gain bandwidth product

(C) Current gain characteristics

(D) Base-emitter voltage threshold

33. What is the purpose of inverting (–) and non-inverting (+) input terminals on an operational amplifier ?

(A) Determine Op-Amp's power supply

(B) Control gain of Op-Amp

(C) Define the amount of feedback

(D) Provide input signals for differential amplification

34. The phase difference between the input and output voltages in a common base arrangement is .....

(A) 180°

(B) 90°

(C) 270°

(D) 0°

35. Which of the following is true about the FET as its advantage ?

(A) Low input resistance

(B) High output resistance

(C) Big size, small life

(D) Better thermal stability

36. What is fractional –N frequency synthesis in PLLs and is it used ?

(A) It involves using fractional values in the frequency divider to achieve finer frequency resolution

(B) It utilizes non-integer division ratios to improve phase noise performance

(C) It refers to using fractional values VCO control voltage

(D) It is technique to eliminate spurious signals in the PLL output

37. ..... oscillator can be used where high stability of frequency is required.

(A) Wien bridge

(B) Crystal

(C) Hartley

(D) Colpitts

38. Which of the following ICs is the standard IC used for V to F conversion ?

(A) 741

(B) 7400

(C) 566

(D) 723

39. Instrumentation amplifier is best suited for .....

(A) Detection of signal from photodiode

(B) Detection of output from load cell

(C) Detection of signal from distance stars

(D) Detection of signal from RF transponder

40. Which of the following IC does not belong to voltage regulator class ?

(A) 7805

(B) 7905

(C) LM 723

(D) NE536

41. What type of gates are NAND and NOR gates considered to be ?

(A) Special-purpose gates

(B) Complex gates

(C) Standard logic gates

(D) Outdated gates

42. What is the primary building block of a CPLD ?

(A) Flip-flop

(B) Gate

(C) Block RAM

(D) Macro cell

43. What is the primary building block of an FPGA ?

(A) Macro cell

(B) Gate

(C) Look-Up Table (LUT)

(D) Flip-flop

44. In a 4-bit ripple counter, how many clock pulse are required for a complete counting cycle ?

(A) 4

(B) 8

(C) 16

(D) 2

45. ..... is used to carry digital data on analog lines.

(A) Modem

(B) Demodulator

(C) Modulator

(D) Multiplexer

46. Modulo 6 counter can be built with ..... flip flops.

(A) 2

(B) 3

(C) 4

(D) 6

47. The type of register, in which we have access only to leftmost and rightmost feedback :

(A) Parallel in serial out register

(B) Serial in serial out register

(C) Shift left and shift right register

(D) Serial in parallel out register

48. In FSM diagram what does circle represent ?

(A) State

(B) Change of state

(C) Output value

(D) Initial state

49. ..... are employed to specify parameters that can be supplied to VHDL entities.

(A) Port numbers

(B) Packages

(C) Declarations

(D) Generics

50. ..... is an example of a combinational circuit.

(A) Shift Registers

(B) Counters

(C) Flip flops

(D) Multiplexers

51. Why do we need a ULN2003 in driving a stepper motor from 8051 port ?

(A) for switching the motor ON and OFF

(B) for increasing the current

(C) for increasing the power

(D) for auto shut off on short circuit

52. Which of the following signal controls the flow of data ?

(A) RTS

(B) DTR

(C) RTS and DTR

(D) ECNR

53. If we push data onto the stack, then the stack pointer :

(A) increases with every push

(B) decreases with every push

(C) increases and decreases with every push

(D) doesn't change

54. What steps are followed when we need to turn on any timer ?

(A) load the count, start the timer, keep monitoring it, stop the timer

(B) load the TMOD register, load the count, start the timer, keep monitoring it, stop the timer

(C) load the TMOD register, start the timer, load the count, keep monitoring it, stop the timer

(D) load the count, divide TCON by 2, start the timer, keep monitoring it, stop the timer

55. The function of Execution Unit is :

(A) Encoding

(B) Decoding

(C) Processing

(D) Calculations

56. The JS is called as .....

(A) jump the signed bit

(B) jump single bit

(C) jump simple bit

(D) jump signal it

57. Which microprocessor accepts the program written for 8086 without any changes ?

(A) 8085

(B) 8051

(C) 8057

(D) 8088

58. Match the following :

List I

(1) TCON

(2) SBUF

(3) TMOD

(4) PSW

(5) PCON

List II

(*i*) contains status information

(*ii*) timer/counter control register

(*iii*) idle bit, power down bit

(*iv*) serial data buffer for Tx and Rx

(*v*) timer/counter modes of operation

Codes :

	(1)	(2)	(3)	(4)	(5)
(A)	(*ii*)	(*iv*)	(*v*)	(*i*)	(*iii*)
(B)	(*i*)	(*v*)	(*iv*)	(*iii*)	(*ii*)
(C)	(*v*)	(*iii*)	(*ii*)	(*iv*)	(*i*)
(D)	(*iii*)	(*ii*)	(*i*)	(*v*)	(*iv*)

59. If the ..... pin is ....., then we have the option of using the ..... ROM or EPROM together with ..... memory and devices.

(A) EA, high, internal, external

(B) EA, low, internal, external

(C) EA, high, external, internal

(D) EA, low, external internal

60. Which of the following Buses is/are present in a microcontroller for transferring data from one place to another ?

(A) Data bus only

(B) Data Bus, Address Bus

(C) Address Bus

(D) Address Bus, Data Bus, Control Bus

61. In charge free space, the Poisson equation becomes :

(A) Maxwell equation

(B) Ampere equation

(C) Laplace equation

(D) Steady state equation

62. The total number of magnetic field lines passing through an area is termed as :

(A) Voltage

(B) EMF

(C) Magnetic flux

(D) Magnetic flux density

63. Which of the following laws does not form a Maxwell equation ?

(A) Planck's law

(B) Gauss's Law

(C) Faraday's law

(D) Ampere's Law

64. In free space, which of the following will be zero ?

(A) Permittivity

(B) Permeability

(C) Conductivity

(D) Resistivity

65. A wave incident on a surface at an angle 60 degree is having field intensity of 6 units. The reflected wave is at an angle of 30 degrees. Find the field intensity after reflection.

(A) 9.4

(B) 8.4

(C) 10.4

(D) 7.4

66. An example for lossless propagation is :

(A) Dielectric waveguide propagation

(B) Conductor propagation

(C) Cavity resonator propagation

(D) Not practically possible

67. An example for usage of electromagnetic wave propagation is :

(A) refrigerator

(B) electric fan

(C) mobile transponder

(D) relays in actuators

68. The radiation resistance of an antenna having a power of 120 units and antenna current of 5A is :

(A) 4.8

(B) 9.6

(C) 3.6

(D) 1.8

69. Copper behaves as a :

(A) Conductor always

(B) Conductor or dielectric depending on the applied electric field strength

(C) Conductor or dielectric depending on the frequency

(D) Conductor or dielectric depending on the electric current density

70. The modes in a rectangular waveguide are denoted by TE_{mn}/ TM_{mn}, where m and n are the Eigen values along the larger and smaller dimensions of the waveguide respectively. Which one of the following statements is *true* ?

(A) The TM_{10} mode does not exist

(B) The TE_{10} mode does not exist

(C) The TE_{10} and TM_{10} both exist and have same cut-off frequencies

(D) When m and n are increased, the cut-off frequency decreases

71. The refractive index variation of a singal mode fiber is :

(A) Gradual from core to cladding

(B) Increasing from core to cladding

(C) Step change from core to cladding

(D) Linear change from core to cladding

72. The characteristic of a radio receiver associated with true reproduction of audio signal is :

(A) Sensitivity

(B) Selectivity

(C) Image rejection

(D) Fidelity

73. The wavelength for a frequency of 25 MHz is :

(A) 15 metres

(B) 4 metres

(C) 12 metres

(D) 32 metres

74. Which of the following is disadvantage of FM over AM ?

(A) less modulating power is required

(B) better noise immunity is provided

(C) higher bandwidth is required

(D) carrier is of any shape

75. If the noise figures of the first stage of a two stage cascade network is 8 dB and the noise figure of the second stage is 7 dB and the gain of the first stage is 10, then the noise figure of the cascade is :

(A) 8.6 dB

(B) 7.6 dB

(C) 5.6 dB

(D) 8.9 dB

76. Bluetooth is an example of :

(A) Wide area network

(B) Virtual private network

(C) Local area network

(D) Personal area network

77. Intermodal dispersion occurring in a large amount in multimode step index fiber results in ..... .

(A) Propagation of the fiber

(B) Propagating through the fiber

(C) Pulse broadening at output

(D) Attenuation of waves

78. The internal quantum efficiency of LEDs decreases ..... with temperature.

(A) Exponentially, decreasing

(B) Exponentially increasing

(C) Linearly, increasing

(D) Linearly, decreasing

79. Which technology is used by the backscatter measurement method ?

(A) Refraction

(B) Francis flat recovery

(C) Optical time domain reflectometry

(D) Optical frequency

80. Which of the following is the way in which an IoT device is associated with data ?

(A) Internet

(B) Cloud

(C) Automata

(D) Network

81. In a SCR circuit, the angle of conduction can be changed by changing :

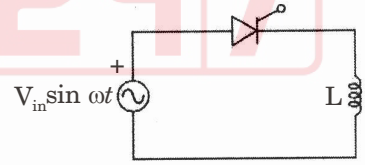
(A) anode voltage

(B) anode current

(C) forward current rating

(D) gate current

82. A half-wave thyristor converter supplies a purely inductive load, as shown in Fig. If the triggering angle of the SCR is 120°, the extinction angle will be :



(A) 240°

(B) 180°

(C) 200°

(D) 120°

83. A dc to dc transistor chopper supplied from a fixed voltage dc source feeds afixed-resistive-inductive load and a free-wheeling diode. The chopper operates at 1 kHz and 50% duty cycle. Without changing the value of the average dc current through the load, if it is desired to reduce the ripple content of load current, the control action needed will :

(A) increase the chopper frequency and duty cycle in equal ratio

(B) increase the chopper frequency keeping the duty cycle constant

(C) decrease only the chopper frequency

(D) decrease only the duty cycle

84. In the SCR tap-switch inverter, when SCR_1 is fired :

(A) positive peak of the ac O/P is obtained

(B) negative peak of the O/P is obtained

(C) two-third to peak value is obtained

(D) one-third of the peak value is obtained

85. It is required to drive a d.c. shunt motor at different speeds in both the directions (forward and reverse) and also to break it in both the directions which one of the following would you use ?

(A) a half-controlled thyristor-bridge

(B) a full-controlled thyristor-bridge

(C) a dual converter

(D) a diode bridge

86. The speed and torque of induction motors can be varied by which of the following means ?

(A) Chopper voltage control

(B) Rotor voltage control

(C) Current control

(D) Stator voltage, rotor voltage and frequency control

87. 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-linearity causes malfunctioning

(C) Less expensive

(D) More expensive

88. A closed loop system is distinguished from open loop system by one of the following :

(A) Servo mechanism

(B) Feedback

(C) Output pattern

(D) Input pattern

89. A system with gain margin close to unity or a phase margin close to zero is :

(A) Highly stable

(B) Oscillatory

(C) Relatively stable

(D) Unstable

90. The transient response of a system is mainly due to :

(A) inertia forces

(B) internal forces

(C) stored energy

(D) friction

91. Which of the following is most commonly used IOT standards for Medium Access Control (MAC) ?

(A) IEEE802.15.4

(B) IEEE802.11ah

(C) IEEE 2413

(D) IEEE11073

92. One of the following transducers is very popular for measurement of rotational displacements :

(A) Shaft encoder

(B) Differential capacitor

(C) LVDT

(D) Strain gauge

93. What is the name of a device that converts sound waves to electrical waves ?

(A) an amplifier

(B) a recorder

(C) a filter

(D) a microphone

94. For a measuring system, dynamic sensitivity is required to be ..... of static sensitivity.

(A) $\pm$ 2%

(B) $\pm$ 5%

(C) $\pm$ 10%

(D) $\pm$ 20%

95. For a measurement, indicated value is 225 V while true value is 226 V. What will be the static error of instrument ?

(A) 1 V

(B) –1 V

(C) 0.5 V

(D) –0.5 V

96. Which part is called as heart of CRO ?

(A) CRT

(B) Sweep generator

(C) Trigger circuit

(D) Amplifier

97. The process of obtaining the spectrum of a given signal using the basic mathematical tools is known as :

(A) time domain analysis

(B) mathematical analysis

(C) spectral analysis

(D) pseudo analysis

98. Strain gauge is a :

(A) active device and converts mechanical displacement into a change of resistance

(B) passive device and converts electrical displacement into a change of resistance

(C) passive device and converts mechanical displacement into a change of resistance

(D) active device and converts electrical displacement into a change of resistance

99. From equipment point of view, the respiratory system in the human body is a ..... system.

(A) Hydraulic

(B) Pneumatic

(C) Mechanical

(D) Electrical

100. Home blood glucose sensor works on which principle ?

(A) Electrophysiological

(B) Electrochemical

(C) Physio-chemical

(D) Chemical

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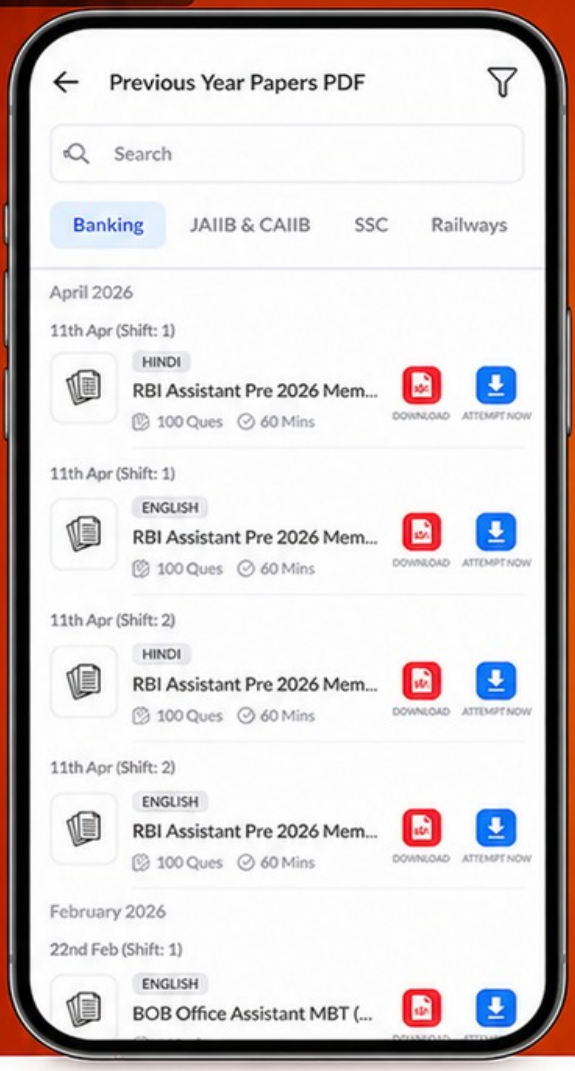

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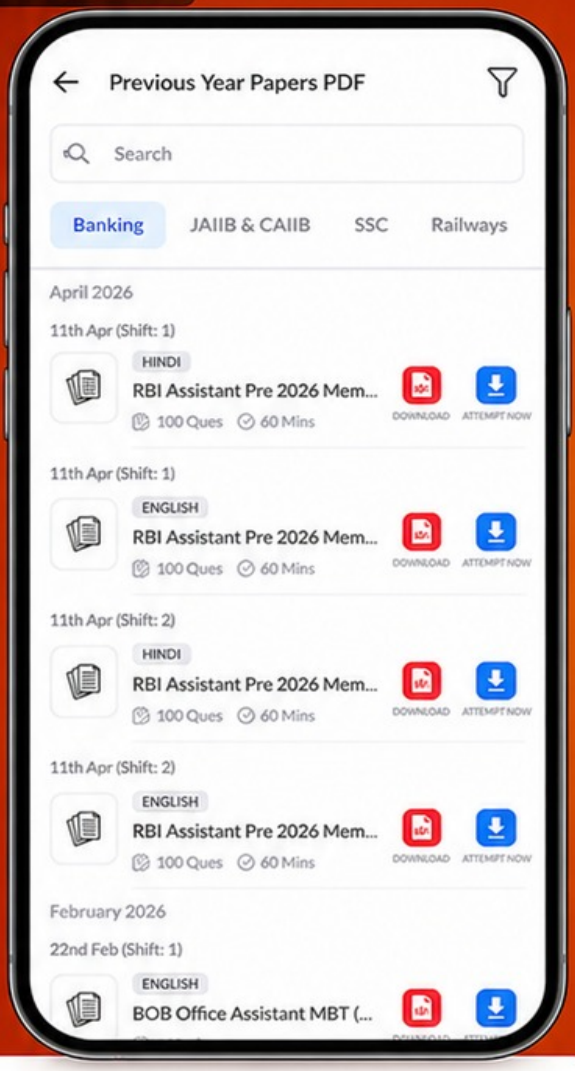

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