

008/2018

Question Booklet
Alpha Code

A

Question Booklet
Serial Number

Total No. of Questions: 100

Maximum : 100 Marks

Time : 75 Minutes

INSTRUCTIONS TO CANDIDATES

1. The question paper will be given in the form of a Question Booklet. There will be four versions of question booklets with question booklet alpha code viz. A, B, C & D.
2. The Question Booklet Alpha Code will be printed on the top left margin of the facing sheet of the question booklet.
3. The Question Booklet Alpha Code allotted to you will be noted in your seating position in the Examination Hall.
4. If you get a question booklet where the alpha code does not match to the allotted alpha code in the seating position, please draw the attention of the Invigilator IMMEDIATELY.
5. The Question Booklet Serial Number is printed on the top right margin of the facing sheet. If your question booklet is un-numbered, please get it replaced by new question booklet with same alpha code.
6. The question booklet will be sealed at the middle of the right margin. Candidate should not open the question booklet, until the indication is given to start answering.
7. Immediately after the commencement of the examination, the candidate should check that the question booklet supplied to him contains all the 100 questions in serial order. The question booklet does not have unprinted or torn or missing pages and if so he/she should bring it to the notice of the Invigilator and get it replaced by a complete booklet with same alpha code. This is most important.
8. A blank sheet of paper is attached to the question booklet. This may be used for rough work.
9. **Please read carefully all the instructions on the reverse of the Answer Sheet before marking your answers.**
10. Each question is provided with four choices (A), (B), (C) and (D) having one correct answer. Choose the correct answer and darken the bubble corresponding to the question number using Blue or Black Ball-Point Pen in the OMR Answer Sheet.
11. **Each correct answer carries 1 mark and for each wrong answer 1/3 mark will be deducted. No negative mark for unattended questions.**
12. No candidate will be allowed to leave the examination hall till the end of the session and without handing over his/her Answer Sheet to the Invigilator. Candidates should ensure that the Invigilator has verified all the entries in the Register Number Coding Sheet and that the Invigilator has affixed his/her signature in the space provided.
13. Strict compliance of instructions is essential. Any malpractice or attempt to commit any kind of malpractice in the Examination will result in the disqualification of the candidate.

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Maximum : 100 Marks

Time : 1 hour and 15 minutes

1. Which one of the following item comes under the Concurrent list of Indian Constitution ?
(A) Defence (B) Education
(C) Citizenship (D) Local Government
2. The words Socialist and Secular were added to the Preamble by :
(A) 42nd amendment (B) 47th Amendment
(C) 44th Amendment (D) 41st Amendment
3. Article 280 of the Indian Constitution deals with :
(A) Planning Commission (B) Election Commission
(C) Finance Commission (D) Law Commission
4. The World Environment Day is observed on ;
(A) September 5th (B) October 24th
(C) December 10th (D) June 5th
5. Abhinjana Sakunthalam was translated into Malayalam by :
(A) V. T Bhattathirippad
(B) Kodungallur Kunhikkuttan Thampuran
(C) Kerala Varma Valiyakoyi Thampuran
(D) E. M. S Namboodiripadu
6. The first female judge in India and also the first woman in India to become a High Court judge :
(A) Margaret Pavamani (B) Koothattukulam Mary
(C) Laitha Prabhu (D) Anna Chandi
7. The wagon Tragedy was the tragic incident of the Malabar Rebellion took place on :
(A) 11th December, 1920 (B) 10th November, 1921
(C) 10th October, 1921 (D) 11th September, 1920
8. Editor of Mitavadi journal :
(A) K. Kelappan (B) T. K. Madhavan
(C) C. Krishnan (D) A. K. Pillai
9. The poet who is often considered as the National Poet of Kerala :
(A) Vallathol Narayana Menon (B) Kumaran Asan
(C) G. Sankara Kurupu (D) Vailoppilli Sreedhara Menon
10. The famous Play Pattabakki was written by :
(A) Kesava Dev (B) K. Damodaran
(C) Takazhi Shivasankara Pillai (D) Vaikom Muhammad Basheer

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[P.T.O.]

11. First Malayalam Dictionary was compiled by :
(A) Dr. Herman Gundert (B) Father Clement
(C) Hendrik Van Rheede (D) Mr. Brennen
12. Savarna Jatha organized by the Caste Hindus under the leadership of
(A) K.T.K. Krishnan (B) A. K. Gopalan
(C) Mannath Padmanabhan (D) P. Krishna Pillai
13. The famous historical novel written by C.V. Raman Pillai
(A) Sarada (B) Dharma Raja
(C) Indulekha (D) Kundalata
14. Prathyaksha Raksha Daiva Sabha was a religious protest movement founded in 1909 by :
(A) P. K. Chathan Master (B) Ayyan Kali
(C) Pampadi John Joseph (D) Poikayil Yohannan
15. Vakkam Abdul Khader Moulavi was the Founder of
(A) Islam Dharma Paripalana Sangham
(B) Sadhu Jana Paripalana Sangham
(C) Atmavidya Sangham
(D) Sahodara Prasthanam
16. The first complete printed book in the Malayalam language is the
(A) Varthamana Pusthakam (B) Vedadhikara Nirupanam
(C) Samshepavedartham (D) Leelathilakam
17. Misrabhojanam (Mixed Feast for all castes) was organised by
(A) Chattampi Swamikal (B) Pandit K. P. Karuppan
(C) Vagbhatananda (D) K. Ayyappan
18. Who is the author of the book Ministry of Utmost Happiness ?
(A) Arundhati Rai (B) Jhumpa Lahiri
(C) Anitha Nair (D) Santha Rama Rau
19. Pandit Jasraj has established his reputation in which of the following field ?
(A) Drama (B) Literature
(C) Dance (D) Music
20. Which city to host the 2024 summer Olympics ?
(A) London (B) Paris
(C) New York (D) Los Angeles

21. Resistivity of a conductor is the resistance between _____ faces of a cube of that material.
(A) opposite (B) adjacent
(C) side to top (D) side to bottom
22. Capacitance between two plates is
(A) $C=Q/V$ (B) $C=QV$
(C) $C= V/Q$ (D) $C= V/I$
23. The absolute permeability of a material is defined as
(A) $\mu = H/B$ (B) $\mu = B/H$
(C) $\mu = HB$ (D) $\mu = \phi/H$
24. Reluctance is the property of a material which opposes the creation of _____ in it.
(A) Current (B) Voltage
(C) Magnetic flux (D) Resistance
25. EMF in an electric circuit corresponds to _____ in a magnetic circuit
(A) ϕ (B) Reluctance
(C) NI (D) H
26. Energy stored in magnetic circuit is equal to _____.
(A) LI (B) $LI/2$
(C) $LI^2/2$ (D) NI
27. The material for the positive plate in a lead acid cell is _____.
(A) PbO_2 (B) Pb
(C) H_2SO_4 (D) O_2
28. Capacity of a cell is measured in _____.
(A) Amp. (B) Wh.
(C) Cm^3 (D) AH

29. A damping force acts on the moving system when the pointer is _____
 (A) At rest (B) Stationary
 (C) Faulty (D) Moving
30. An ammeter range can be extended by using _____
 (A) Inductor (B) Shunt
 (C) Multiplier (D) Capacitor
31. If $e_A = E_m \sin \omega t$, then equation for e_B leading an Angle Φ to e_A is
 (A) $e_B = E_m \sin (\omega t + \Phi)$ (B) $e_B = E_m \sin (\omega t - \Phi)$
 (C) $e_B = E_m \cos (\omega t + \Phi)$ (D) $e_B = E_m \cos (\omega t - \Phi)$
32. RMS value equal to _____ \times average value
 (A) $\sqrt{2}$ (B) $\sqrt{3}$
 (C) 4.44 (D) 1.11
33. The phase shift of the voltage $E_l = (a + jbl)$ is
 (A) $\tan^{-1} (a/b)$ (B) $\tan^{-1} (b/a)$
 (C) $\cos^{-1} (a/b)$ (D) $\sin^{-1} (b/a)$
34. Apparent power is the product of
 (A) $VI \cos \phi$ (B) VI
 (C) $VI \sin \phi$ (D) $VI \tan \phi$
35. Resonance frequency is one at which net reactance is _____ and impedance is _____
 (A) R and 0 (B) R and XL
 (C) 0 and R (D) X_c and XL
36. Laminations reduces _____ loss in an electric machine
 (A) Copper loss (B) frictional loss
 (C) hysteresis loss (D) eddy current loss

37. Lap winding is used for _____ machines.
- (A) low current low Voltage (B) high voltage low current
(C) high current low voltage (D) high voltage high current
38. Shaft torque of a DC motor is _____ than it's armature torque.
- (A) higher (B) equal
(C) double (D) less
39. The heat produced in the core at no load of a transformer is due to _____
- (A) $I_o \sin \Phi_o$ (B) $I_o \cos \Phi_o$
(C) I_o (D) $I_o \tan \Phi_o$
40. Wattmeter reading in an OC test of a transformer gives _____ loss
- (A) Copper (B) Core
(C) Eddy current (D) Hysteresis
41. The saving in copper with an auto transformer as compared to ordinary transformer is
- (A) KW_o (B) W_o/K
(C) $(1 - K)W_o$ (D) $(1 + K)W_o$
42. The condition for maximum efficiency of a transformer is
- (A) $V_1 = V_2$ (B) $R_{o1} = X_{o1}$
(C) $R_{o2} = X_{o2}$ (D) $W_i = W_c$
43. If primary and secondary winding resistance of a transformer is $R_1 = 0.1 \Omega$, $R_2 = 0.5 \Omega$, respectively and $K=6$, then equivalent resistance referred to secondary side is
- (A) 5.1 (B) 3.6
(C) 4.1 (D) 6.6
44. Synchronous speed of a 4 pole 50 hertz induction motor is
- (A) 1000 rpm (B) 1500 rpm
(C) 2000 rpm (D) 3000 rpm

45. In the circle diagram of an induction motor the line joining from the tip of the I_{sn} to I_o is
 (A) torque line (B) output line
 (C) power line (D) voltage line
46. The electrical equivalent of mechanical load on an induction motor is
 (A) $R_2/S (1/s - 1)$ (B) $R_2 (1/s-1)$
 (C) $X_2 (1/s-1)$ (D) $X_2/S (1/s-1)$
47. In a double cage induction motor outer winding has _____ resistance
 (A) Low (B) Medium
 (C) High (D) Zero
48. In an induction motor the torque is _____ to the flux
 (A) Directly proportional (B) Equal
 (C) Not proportional (D) Inversely proportional
49. The frequency of alternating voltage of an alternator is _____
 (A) $120 N/P$ (B) $120 P/N$
 (C) $PN/120$ (D) $N/120P$
50. _____type rotors are used for high;speed alternators
 (A) Slip ring type (B) Projecting pole type
 (C) Squirrel cage type (D) Smooth cylindrical type
51. Short pitched windings are used in alternators because
 (A) To eliminate harmonics (B) To save copper
 (C) To reduce the losses (D) All of the above
52. The equation for pitch factor k_c is
 (A) $k_c = \cos(\alpha/2)$ (B) $k_c = \sin(\alpha/2)$
 (C) $k_c = \tan(\alpha/2)$ (D) $k_c = \cos(\alpha)$

53. Synchronous reactance of an alternator includes
- (A) Leakage reactance and armature reaction reactance
 - (B) Both resistance and reactance
 - (C) Capacitance and leakage reactance
 - (D) Armature reactance and resistance
54. _____ Motor runs at constant speed irrespective of the load.
- (A) Induction motor
 - (B) Series motor
 - (C) Synchronous motor
 - (D) Shunt motor
55. _____ lamp has higher luminous efficiency.
- (A) Incandescent
 - (B) Fluorescent
 - (C) CFL
 - (D) LED
56. Example for a trivalent impurity is _____
- (A) Germanium
 - (B) Silicon
 - (C) Indium
 - (D) Carbon
57. Zener diodes are used for _____
- (A) voltage regulation
 - (B) rectification
 - (C) amplification
 - (D) current reduction
58. _____ material can be used as fuse wire
- (A) Iron
 - (B) Lead tin alloy
 - (C) Aluminium
 - (D) Nickel chromium alloy
59. Corona is the effect occurring in _____
- (A) transformers
 - (B) transmission lines
 - (C) generators
 - (D) motors
60. The wire used for service connection is _____
- (A) Weather proof wire
 - (B) lead sheathed wire
 - (C) PVC wire
 - (D) CTS wire

61. An Ideal OP-AMP has _____
- (A) Zero gain (B) Infinite gain
(C) Infinite output resistance (D) Zero input resistance
62. Which one of the following Bridge is used for the measurement of frequency ?
- (A) Wein bridge (B) Wheatstones bridge
(C) Maxwell bridge (D) Schering bridge
63. Among the following which instrument is used for the measurement of electrical activity of brain ?
- (A) ECG (B) EMG
(C) ENG (D) EEG
64. Which one of the following monolithic IC is used for switching regulation ?
- (A) CA1523 (B) CA3524
(C) LM309K (D) NE550
65. Efficiency is maximum in _____ amplifier
- (A) Class A (B) Class C
(C) Class B (D) None of these
66. In personnel computer the BIOS is stored in
- (A) RAM (B) Registers
(C) ROM (D) All of the above
67. The electromagnetic modes does not exist in waveguide is
- (A) TEM (B) TE₁₁
(C) TE₀₁ (D) TM₀₁
68. The UPS in which the inverter is ON even the main power is ON is
- (A) OFF Line UPS (B) ON Line UPS
(C) Electronic generator (D) None of the above

69. The breakdown mechanism occurs in Zener Diode is_____
- (A) Zener breakdown (B) Avalanche breakdown
(C) Tunnelling (D) Both (A) & (B)
70. The holding current is _____ than the latching current in thyristor
- (A) More (B) Less
(C) Equal (D) None of the above
71. Intel 8086 microprocessor has _____ line data bus
- (A) 16 (B) 8
(C) 32 (D) 12
72. The law defines the polarity of induced emf in a coil is
- (A) Faraday's law (B) Lenz's law
(C) Fleming's law (D) Ampere's law
73. The gain bandwidth product of an amplifier is _____
- (A) Constant (B) increase with bandwidth
(C) increase with gain (D) none of these
74. The main advantage of schottky TTL logic family is its least
- (A) power dissipation (B) propagation delay
(C) Fan-in (D) Noise immunity
75. When negative feedback is employed _____ reduces
- (A) Stability (B) Input impedance
(C) Bandwidth (D) Distortion
76. Which one of the following is not a component of PLL ?
- (A) Phase detector (B) Frequency Multiplier
(C) Loop Filter (D) VCO
77. _____ transducer is used for measuring the magnetic flux density
- (A) Hall effect transducer (B) Thermocouple
(C) LVDT (D) Strain gauge

78. The hall effect voltage of intrinsic silicon is _____
(A) Positive (B) Negative
(C) Zero (D) Changed by the application of magnetic field
79. Opto coupler is used for _____
(A) Regulate gate signal
(B) Reduce SCR turn - off time
(C) Isolate gate circuit from power line
(D) Protect IGBT against dv/dt
80. Zero error of an instrument is _____
(A) Gross error (B) Random error
(C) Indefinite error (D) systematic error
81. The megger is used for the measurement of _____
(A) Insulation resistance (B) Power
(C) Flux (D) Voltage
82. In data transmission which of the following system gives maximum probability error ?
(A) PSK (B) FSK
(C) ASK (D) DPSK
83. Location of balun in a TV system is between
(A) AGC Stages (B) Feeder and Receiver
(C) Antenna and Receiver (D) There is no balun
84. _____ is not a binary code
(A) CCITT2 (B) ARQ
(C) Boudot (D) Morse
85. The amplifier which has no drift is
(A) Chopper amplifier (B) DC amplifier
(C) Single ended amplifier (D) Differential amplifier

86. Another name of Y signal is _____
(A) Chrominance (B) multiplexed
(C) Luminance (D) Colour difference
87. Sensitivity factor of strain gauge is of the order of _____
(A) 1 – 1.5 (B) 5 – 10
(C) 2.0 – 3.0 (D) 1.5 – 2.0
88. For a transmitted signal if coherence time of the channel is smaller than the symbol period then it is
(A) Frequency selective fading (B) Slow fading
(C) Fast fading (D) Frequency non-selective fading
89. RS 232 is the standard for
(A) Parallel port (B) Serial port
(C) Game port (D) Network port
90. NADC is the 2G standard for _____
(A) TDMA (B) CDMA
(C) Both (A) and (B) (D) none of these
91. Iron losses in a DC machine are independent of variations in _____
(A) speed (B) load
(C) voltage (D) speed and voltage
92. Photoconductive cell consist of thin film of _____
(A) Quartz (B) Barium titanate
(C) Lithium sulphate (D) Selenium
93. A transistor has a current gain of 0.99 in CB mode its current gain in CC mode is
(A) 100 (B) 99
(C) 1.01 (D) 0.99

94. ESD cause the damage to which component ?
- (A) Monitor (B) Keyboard
(C) Power supply (D) Expansion card
95. DECT stands for
- (A) Digital European Cellular Telex
(B) Digital European Cordless Telephone
(C) Digital European Cellular Telephone
(D) Digital Emergency Cellular Telephone
96. A microprocessor based system the software used is _____
- (A) Firmware (B) Assembly language
(C) Machine language (D) Basic interpreter instructions
97. The Optical device used for routing signals from one device to another is _____
- (A) Coupler (B) Splitter
(C) Optical combiner (D) All of the above
98. The transient response of a system is due to _____
- (A) Friction (B) Inertia
(C) Stored energy (D) Internal forces
99. The ideal grade of service is _____
- (A) 10% (B) 100%
(C) 1% (D) 0%
100. In a DC generator the critical resistance refers to the resistance of _____
- (A) Field (B) Brushes
(C) Armature (D) Load
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SPACE FOR ROUGH WORK

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