

020/2018

Question Booklet
Alpha Code

A

Question Booklet
Serial Number

Total Number of Questions : 100

Time : 75 Minutes

Maximum Marks : 100

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.

020/2018

1. Which of the following peak is also known as 'Dapsang' ?
(A) The Everest (B) Godwin Austen (C) Anamudi (D) Kanchenjunga
2. How many islands are there in the Lakshadweep ?
(A) 34 (B) 32 (C) 36 (D) 38
3. The smallest neighbouring country of India is :
(A) Nepal (B) Bangladesh (C) Myanmar (D) Bhutan
4. The Revolt of 1857 broke out at :
(A) Kanpur (B) Delhi (C) Meerut (D) Jhansi
5. When was the Jallianwala Bagh massacre ?
(A) April 13, 1918 (B) April 13, 1919 (C) April 19, 1913 (D) April 18, 1919
6. Who gave Indian National Congress its name ?
(A) Dadabhai Naoroji (B) A.O. Hume
(C) W.C. Banerjee (D) Firoz Shah Mehta
7. Who coined the term 'PAKISTAN' for the first time ?
(A) Muhammad Iqbal (B) Muhammad Ali Jinnah
(C) Choudhry Rahmat Ali (D) Khan Abdul Ghaffar Khan
8. At where the congress met in 1920, which decided to conduct a Non-Co-operation movement against the British ?
(A) Bombay (B) Calcutta (C) Nagpur (D) Chauri Chaura
9. Who is known as 'Bardoli Gandhi' ?
(A) Sardar Vallabhbhai Patel (B) Dr. Rajendra Prasad
(C) C. Rajagopalachari (D) Baba Amte

A

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{P.T.O.}

10. The Prime Minister of India, who implemented the Twenty Point Programme in 1975 ?
(A) Rajiv Gandhi (B) Indira Gandhi
(C) Dr. P.V. Narasimha Rao (D) Dr. Manmohan Singh
11. When was Rabindranath Tagore's visit to Sree Narayana Guru ?
(A) 1925 (B) 1924 (C) 1922 (D) 1921
12. Which Kerala social reformer described the British rule as 'Rule of White Devil' or 'Ven Neechan' ?
(A) Ayyankali (B) Pandit Karuppan
(C) Vaikunda Swamikal (D) Vagbhatananda
13. Who among the following person is known as the 'Political Father of the Ezhavas' ?
(A) Sree Narayana Guru (B) Kumaran Asan
(C) Dr. Palpu (D) C. Kesavan
14. Who conducted the famous 'Thali Road Strike' ?
(A) C. Krishnan (B) T.K. Madhavan
(C) Kurumban Daivathan (D) Arattupuzha Velayudha Panicker
15. Who is known as the 'Father of Kerala Literacy' ?
(A) Brahmamda Sivayogi (B) Kuriakose Elias Chavara
(C) Vakkom Abdul Khader Moulavi (D) Swadesabhimani Ramakrishna Pillai
16. Which of the following country, recently levied environment tax for preventing pollution ?
(A) China (B) America (C) Sweden (D) Brazil
17. The 'G-20' meeting of 2016 was held at :
(A) Paris (B) New York (C) Tokyo (D) Shanghu
18. 'Why I am an Atheist' ? Is the autobiography of :
(A) Bhagat Singh (B) Milkha Singh
(C) Chandrasekhar Azad (D) Bal Gangadhar Tilak

19. Which Indian City is known as the 'Mecca of Indian foot ball' ?
(A) Chennai (B) Calcutta (C) Kochi (D) Bangalore
20. Where is the central office of the Reserve Bank of India ?
(A) Mumbai (B) Calcutta (C) Delhi (D) Pune
21. The main purpose of using shunt across a galvanometer is to _____.
(A) Decrease its current range (B) Increase its current range
(C) Decrease its volt range (D) Increase its volt range
22. If two identical 220V, 8kW heating elements are connected in series across a 220 V supply, their combined rating becomes _____ kW.
(A) 2 (B) 8 (C) 16 (D) 4
23. The unit of the quantity of electricity is _____.
(A) Ampere Second (B) Coulomb
(C) Ampere per second (D) Both (A) and (B)
24. The relative permittivity of vacuum is _____.
(A) 8.854×10^{-12} Farad/metre (B) $4\pi \times 10^{-7}$ Henry/metre
(C) 8.854×10^{-12} Henry/metre (D) None of these
25. The unit of conductivity or specific resistance is _____.
(A) Siemens/metre (B) ohm/metre (C) ohm-metre (D) Siemens
26. A switch should be placed at any height _____ above the floor level.
(A) 1.5 m (B) 1.3 m (C) 1.2 m (D) 1.6 m
27. For lamps with wattage above 300 W, _____ lamp holders are used.
(A) Edison screw type (B) Goliath Edison screw type
(C) Bracket (D) Bayonet cap

28. The composition of Electrician's solder consists of _____.
- (A) Tin 60% Lead 40% (B) Tin 40% Lead 60%
- (C) Tin 90% Lead 10% (D) Tin 10% Lead 90%
29. The size of the fan is generally determined by its _____.
- (A) length (B) thickness (C) diameter (D) sweep
30. An auto transformer works on the principle of _____.
- (A) Statically induced emf (B) Self induced emf
- (C) Mutually induced emf (D) Dynamically induced emf
31. At unity power factor, the effect of armature reaction is _____.
- (A) Demagnetising (B) Magnetising
- (C) Cross magnetising (D) None of these
32. A current transformer is usually a _____ transformer.
- (A) step down (B) step up (C) shell type (D) isolation
33. When a moving iron instrument is connected in an AC circuit it indicates _____.
- (A) Average value (B) Maximum Value (C) RMS value (D) None of these
34. The moving coil in a dynamometer type wattmeter is connected _____.
- (A) In series with the fixed coil (B) Across the load
- (C) In series with the load (D) Across the supply
35. The type of rotor is used in low and medium speed alternators are _____.
- (A) smooth cylindrical type (B) non-salient pole type
- (C) salient pole type (D) squirrel cage type
36. The number of slip rings in a rotating field system type alternator is _____.
- (A) 2 (B) 3 (C) 4 (D) 6

37. The transformer connection used at the substation end of the transmission line is _____.
(A) Star - Star (B) Delta - Delta (C) Delta - Star (D) Star - Delta
38. The essential condition for the parallel operation of two single phase transformers should be _____.
(A) The same voltage ratio (B) The same polarity
(C) The same phase sequence (D) Both (B) and (C)
39. The method of speed control of series motor used in electric trains is _____.
(A) Field tapping method (B) Field diverter method
(C) Series parallel method (D) Voltage control method
40. The dc generator used for arc welding process is _____.
(A) Cummulatively compound (B) Series wound
(C) Under compound (D) Differentially compound
41. An electric current of 10 A is divided into two branches of resistance $2\ \Omega$ and $3\ \Omega$ respectively. The branch current in $3\ \Omega$ resistance is _____ A.
(A) 4 (B) 6 (C) 3 (D) 2
42. A 3ϕ induction motor is wound for 4 poles, the synchronous speed of the motor supplied from a 50 Hz system is _____ rpm.
(A) 1440 (B) 1500 (C) 1400 (D) 1600
43. Armature torque produced in a dc series motor is proportional to _____.
(A) The field current (B) The armature current
(C) The square of the armature current (D) None of these
44. During charging of a lead acid cell, the specific gravity of the electrolyte is _____.
(A) Decreases (B) Increases (C) Doesnot change (D) None of these
45. The power consumption of purely capacitive circuit is _____.
(A) zero (B) unity (C) less than unity (D) greater than unity

46. A coil has a resistance of 6Ω and reactance of 8Ω are connected in series, its impedance is _____ Ω .
 (A) 36 (B) 64 (C) 14 (D) 10
47. The emf of a Fully charged lead acid cell is _____ volt.
 (A) 1.21 (B) 2.1 (C) 1.8 (D) 1.4
48. The transfer of heat from the heating element with in to material being ironed in an electric iron is done by using _____.
 (A) Pressure plate (B) Sole plate (C) Heel plate (D) Thermostat
49. Increased capacitance can be obtained by connecting the given capacitors in _____.
 (A) Series (B) Parallel (C) Series Parallel (D) None of these
50. Three resistances of 4Ω each are connected in parallel the equivalent resistance will be _____ Ω .
 (A) $\frac{4}{3}$ (B) $\frac{3}{4}$ (C) $\frac{1}{4}$ (D) 16
51. The compensating windings are connected in _____ of dc generator.
 (A) series with field winding (B) parallel with field winding
 (C) series with armature winding (D) parallel with armature winding
52. One Farad = _____.
 (A) one coulomb/sec (B) one joule/coulomb
 (C) one joule/sec (D) one coulomb/volt
53. The direction of force produced on a current carrying conductor placed in a magnetic field can be determined by _____.
 (A) Fleming's left hand rule (B) Fleming's right hand rule
 (C) Lenz's law (D) Cork screw rule
54. Which one of the following material is an acceptor impurity ?
 (A) Antimony (B) Silicon (C) Boron (D) Germanium

55. A Full wave bridge rectifier uses _____ diodes.
(A) 1 (B) 2 (C) 3 (D) 4
56. Hysteresis loss is proportional to _____.
(A) square of the frequency (B) frequency
(C) square of the thickness (D) thickness
57. The critical field resistance of a shunt generator should be _____.
(A) Greater than its shunt field resistance
(B) Smaller than its shunt field resistance
(C) Equal to the shunt field resistance
(D) None of these
58. The knee voltage/cut in voltage of a silicon diode is _____.
(A) 0.2 V (B) 0.3 V (C) 0.5 V (D) 0.7 V
59. The reciprocal of impedance is _____.
(A) Susceptance (B) Conductance (C) Admittance (D) Resistance
60. The instrument used for measuring current in a current carrying conductor without interrupting the circuit is _____.
(A) MI ammeter (B) Clamp on ammeter
(C) Current transformer (D) Potential transformer
61. The application of inductor/ballast in fluorescent lamp circuit is to _____.
(A) Increase the current at the time of starting
(B) limit the current through the lamp
(C) Reduce the induced emf
(D) None of these
62. Which one of the following material must have negative temperature coefficient of resistance ?
(A) Copper (B) Brass (C) Mica (D) Manganin

63. The effective value of sine wave is _____.
- (A) $0.707 \times V_{\max}$ (B) $0.637 \times V_{\max}$ (C) $0.707 \times V_{\text{average}}$ (D) $0.637 \times V_{\text{average}}$
64. The bending of electrodes due to over charging and discharging in a cell is known as _____.
- (A) Hard Sulphation (B) Buckling
(C) Para short (D) None of these
65. The heavily doped region of a bipolar junction transistor is _____.
- (A) Emitter (B) Base (C) Collector (D) None of these
66. The unit of reluctance is _____.
- (A) Ampere turns (B) Ampere turns/weber
(C) Weber/Ampere turns (D) Weber/metre²
67. The fuse element used in HRC fuse is _____.
- (A) Copper (B) Tungsten (C) Aluminium (D) Silver
68. The switch is commonly used to control a lamp from three places is _____.
- (A) One way switch (B) Two way switch
(C) Rotary switch (D) Intermediate switch
69. The load on each power sub circuit should normally be restricted to _____.
- (A) 800 W (B) 3000 kW (C) 3000 W (D) 800 kW
70. Dynamometer type instruments can be used as a _____.
- (A) dc circuit only (B) AC circuit only
(C) For both AC and DC circuits (D) None of these
71. The main winding and starting winding of a single phase induction motor are connected in _____ across the supply.
- (A) Series (B) Series - Parallel (C) Either (A) or (B) (D) Parallel

72. Damper winding in a synchronous motor _____.
- (A) Reduces windage losses
 (B) Serves to start the Motor
 (C) Improves the power factor of the motor
 (D) Increase the hunting of the motor
73. Buchholz relay is used on _____ transformer.
- (A) Shell type (B) Welding (C) Oil cooled (D) Air cooled
74. The direction of rotation of an Induction motor can be changed by changing _____.
- (A) The supply frequency (B) The supply Voltage
 (C) The speed (D) The phase sequence
75. In a Star delta starter, at the time of starting, the phase voltage across the terminals of a squirrel cage induction motor is _____ line voltage.
- (A) $\sqrt{3}$ times (B) $\frac{1}{\sqrt{3}}$ times (C) 3 times (D) $\frac{1}{3}$ times
76. The connection of a Zener diode in a circuit is always _____.
- (A) Forward biased (B) In series (C) Reverse biased (D) Positively biased
77. The most commonly used wiring system in electrical wiring installation is _____.
- (A) Tree system (B) Ring main system
 (C) Distribution system (D) None of these
78. The mettalic sheath is provided in cables to safeguard against _____.
- (A) Mechanical injury (B) Moisture content
 (C) Rusting (D) Serving
79. A device which opens or closes an auxiliary circuit under predetermined conditions in the main circuit is _____.
- (A) Relay (B) Circuit breaker (C) Switch (D) Fuse

80. The most common method to test the armature winding for short and open coils is _____.
- (A) Insulation resistance test (B) Drop test
(C) Growler test (D) Ground test
81. The maximum reverse voltage that a diode can withstand is referred as _____.
- (A) Peak inverse voltage (B) Barrier voltage
(C) Threshold voltage (D) Knee voltage
82. The full load copper loss of a transformer is 400 W. The Copper loss at half load will be _____.
- (A) 100 W (B) 100 kW (C) 200 W (D) 800 W
83. In a wiring two lamps should be switched 'ON' at a time, the wiring is known as _____.
- (A) Corridor wiring (B) Godown wiring (C) Hostel wiring (D) Tunnel wiring
84. ELCB's are specially used to disconnect the supply under _____ conditions.
- (A) Open circuit (B) Over load (C) Short circuit (D) None of these
85. The maximum safe temperature of class B insulation material is _____.
- (A) 130°C (B) 105°C (C) 90°C (D) 120°C
86. The controlling torque in an indicating instrument is _____.
- (A) Decreases with the deflection of moving system
(B) Opposes the deflection torque
(C) Proportional to supply voltage
(D) None of these
87. Form Factor is defined as ratio :
- (A) $\frac{\text{Average Value}}{\text{RMS Value}}$ (B) $\frac{\text{RMS Value}}{\text{Average Value}}$
(C) $\frac{\text{RMS Value}}{\text{Maximum Value}}$ (D) $\frac{\text{Maximum Value}}{\text{RMS Value}}$

88. The damping torque provided by PMMC Instruments is _____.
- (A) Air friction damping (B) Fluid friction damping
(C) Eddy current damping (D) None of these
89. When the motor is stationary, the frequency of rotor current in an Induction motor is _____.
- (A) Same as the supply frequency
(B) Depends upon slip
(C) Depends upon synchronous speed
(D) None of these
90. Kirchoff's voltage law is concerned with _____.
- (A) IR drops (B) Battery emf's
(C) Junction voltages (D) Both (A) and (B)
91. A charge of 100 coulomb is transferred in a circuit by a current of 1A. Time taken by this current is _____ seconds.
- (A) 1 (B) 10 (C) 100 (D) 1000
92. The voltage induced in the armature of a dc generator is _____.
- (A) Pulsating dc (B) DC (C) Rectified ac (D) AC
93. The power taken by a 3 phase star connected load is given by the expression :
- (A) $3 V_L I_L \cos \phi$ (B) $\sqrt{3} V_L I_L \cos \phi$ (C) $\sqrt{3} V_P I_P \cos \phi$ (D) None of these
94. The positive plate of lead acid cell is _____.
- (A) Lead peroxide (B) Sponge lead
(C) Lead sulphate (D) Pottasium hydroxide
95. The starting winding of a resistance start induction motor have _____.
- (A) Low resistance and higher reactance
(B) High resistance and low reactance
(C) Low resistance and low reactance
(D) High resistance and high reactance

SPACE FOR ROUGH WORK

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