

067/2018

Question Booklet
Alpha Code

A

Question Booklet
Serial Number

Total Number of questions : 100

Time : 75 Minutes

Maximum Marks : 100

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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1. Which one of the following is **not** a basic features of the Indian Constitution ?
(A) Parliamentary form of Government
(B) Federal form of Government
(C) Presidential form of Government
(D) Independence of Judiciary
2. The number of Fundamental Rights Constitution originally consists of :
(A) 6 (B) 8 (C) 7 (D) 9
3. The first, Right to Information application submitted by Shahid Raza Burney to a police in :
(A) Pune (B) Thane (C) Muzafarnagar (D) Patna
4. In which year National Rural Employment Guarantee Yojana (NREGY), scheme was renamed as MNREGA ?
(A) February, 2006 (B) April, 2006 (C) August, 2009 (D) December 2009
5. The CMS press, Kottayam, was established in 1821 by :
(A) Dr. Herman Gundert (B) Rev. Benjamin Bailey
(C) Kuriakkose Elias Chavara Achan (D) Anjelo Francis
6. 'Make Namboodhiri a human being' was the slogan of :
(A) Samathwa Samajam (B) Jathinasini Sabha
(C) Kalliyadayani Sabha (D) Yogakshema Sabha
7. The movement that led to the formation of the first Public Service Commission in the state of Travancore was :
(A) Guruvayoor Satyagraha (B) Civil Disobedience Movement
(C) Nivarthana Agitation (D) Vaikom Satyagraha
8. Which Patriot was the brain behind Malayali Memorial Petition submitted to Maharaja of Travancore ?
(A) G.P. Pillai (B) K. Kelappan
(C) Dr. Palpu (D) Chempaka Raman Pillai

A

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{P.T.O.}

9. Which is the paper edited by C. Krishnan to campaign vigorously against untouchability ?
 (A) Kerala Kaumudi (B) Mitavadi
 (C) Desabhimani (D) Sujanandini
10. 'Ritumati', the drama portrayed the cloistered life led by Namboothiri women, written by :
 (A) V.T. Bhattathiripad
 (B) M.P. Bhattathiripad
 (C) Kurur Nilakantan Namboothiripad
 (D) N. Krishna Pillai
11. The freedom fighter belong to famous Palakkad Anakkara Vadaketh family :
 (A) Lalitha Prabhu (B) Parvathi Nenmani Mangalam
 (C) A.V. Kuttimalu Amma (D) Arya Pallam
12. Who is the social reformer voiced against caste system and untouchability through the 'Jathikummi' ?
 (A) P.K. Chathan Master (B) Vagbhatananda
 (C) Sahodaran Ayyappan (D) Pandit K.P. Karuppan
13. The Kerala leader attended Coconada (Kakinada) congress session in 1923 and enlisted congress support in his fight for social justice :
 (A) Dr. Ayyathan Gopalan (B) C. Krishnan
 (C) C.V. Kunjuraman (D) T.K. Madhavan
14. 'Ente Poorvakala Smaranakal', the work written by the political leader :
 (A) A.K. Gopalan (B) A.K. Antony
 (C) V.T. Bhattathiripad (D) E.M.S. Namboothiripad
15. In which year G. Sankara Kurup got the Bharatiya Gnanapidham Award ?
 (A) 1968 (B) 1966 (C) 1955 (D) 1976
16. Who is the present CEO of Rajya Sabha T.V. ?
 (A) Gurdeep Singh Sappal (B) Shashi Sekhar Vempati
 (C) P.J. Kurian (D) M. Venkaiah Naidu

17. Who is the winner of US open badminton Championship Men's Single held at California in 24th July 2017 ?
- (A) H.S. Pranoy (B) Parupalli Kashyap
(C) Kidambi Srikanth (D) Sai Praneeth
18. Who is the director of controversial Bollywood film 'Indu Sarkar' ?
- (A) Tigmanshu Dhulia (B) Madhur Bhandarkar
(C) Sayed Ahamed Afzal (D) Mohit Marwah
19. Who is the present Chairman of NITI Aayog ?
- (A) Dr. Rajiv Kumar (B) Aravind Panagaria
(C) Amitab Kanth (D) Sri. Narendra Modi
20. 'Freedom From Waste' campaign launched by :
- (A) Suchithwa Mission (B) Swachh Bharath
(C) Life Mission (D) Haritha Kerala Mission
21. In a refrigeration cycle, pressure is maximum _____.
- (A) After Expansion Valve (B) After Condenser
(C) After Evaporator (D) After Compressor
22. The Dalton's law deals with the _____.
- (A) Sum partial volumes of gases (B) Sum partial temperature of gases
(C) Sum partial pressure of gases (D) None of these
23. An automatic expansion valve is based on the principle of _____.
- (A) Maintaining a constant degree of superheat
(B) Maintaining a constant pressure in evaporator
(C) Maintaining a constant temperature in the evaporator
(D) Both (A) and (B)

24. Window AC for cooling mode can be easily converted to heating mode by installing a :
- (A) TXV (B) RCV
(C) AXV (D) Solenoid valve
25. Approach of a cooling tower is defined as the :
- (A) Difference of DBT of surrounding air and temperature of water leaving the CT
(B) Difference of temperature of water leaving the CT and temperature of entering water
(C) Difference of temperature of water leaving the CT and WBT of surrounding air
(D) None of the above
26. Temporary hardness of water can be removed by :
- (A) filtering (B) chemical treatment
(C) boiling (D) cooling
27. The cleaning efficiency of a fine filter is :
- (A) 99.9% (B) 100% (C) 80% (D) 70%
28. Which type of fan is used in electrical motors for internal cooling ?
- (A) Backward inclined fan (B) Backward curved fan
(C) Forward curved fan (D) Radial blade fan
29. Which senses the suction temperature in thermal electric expansion valve ?
- (A) Transformer (B) Thermal bulb (C) Thermostat (D) Thermistor
30. Which run capacitor is used with 1.5 TR AC ?
- (A) 36 mfd, 220/250 V (B) 80 mfd 220/250 V
(C) 36 mfd, 440/370 V (D) 80 mfd 440/370 V
31. The difference between the synchronous speed and the actual rotor speed is called :
- (A) Motor speed (B) Slip speed (C) Actual speed (D) Field speed
32. The difference between the dry bulb temperature and wet bulb temperature is called :
- (A) Dew point depression (B) Wet bulb depression
(C) Dry bulb depression (D) Humidity

33. A low side float valve maintains the level of refrigerant in :
 (A) Condenser (B) Evaporator
 (C) Baudelot cooler (D) Flooded evaporator
34. Boiling point of R 600a is :
 (A) -33°C (B) -12°C (C) -77°C (D) -40°C
35. RF remote control with a range of roughly :
 (A) 100 feet (B) 40 feet (C) 20 feet (D) 10 feet
36. Bush bearings are usually made of :
 (A) Nickel (B) Bronze (C) Steel (D) Platinum
37. The sediments which form as a coating on cooling coil will reduce the _____.
 (A) Temperature (B) Heat transfer efficiency
 (C) Suction pressure (D) Heat load on evaporator
38. The extinguisher used for electric fire is :
 (A) Carbon tetrachloride extinguisher
 (B) Carbon dioxide extinguisher
 (C) Soda foam extinguisher
 (D) Methyl bromide extinguisher
39. Cutting of sheet metal by two parallel cutting edge moving in opposite direction is termed as :
 (A) Drawing (B) Swaging (C) Shearing (D) Piercing
40. Water is used as a refrigerant :
 (A) Vapour absorption cycle (B) Vapour compression cycle
 (C) Steam jet refrigeration (D) Air cycle
41. The upcoming alternative refrigerant to be used in car air conditioning system is _____.
 (A) R 134a (B) R 1234ze (C) R 1234yf (D) R 764
42. Comfort cooling ducts are commonly fabricated out of :
 (A) GI (B) Aluminium (C) FRP (D) All of these

43. In saturated air :
- (A) DBT = WBT (B) WBT = DPT (C) DBT = DPT (D) All of these
44. VRF stands for :
- (A) Varying Recirculated Flow (B) Variable Refrigerant Flow
(C) Varying Refrigerant Functions (D) None of these
45. The gap between the false ceiling and the main ceiling is referred as :
- (A) Supply air duct (B) Plenum
(C) Return air duct (D) Diffuser
46. During installation of split AC unit, what is the maximum vertical distance between indoor and outdoor units ?
- (A) 20 feet (B) 30 feet (C) 15 feet (D) 40 feet
47. Water pressure cut out switch is installed in :
- (A) Cooling tower line (B) Condenser water line
(C) Chilled water line (D) Both (B) and (C)
48. For leak testing, maximum test pressure for split AC system is :
- (A) 70 PSIG (B) 150 PSIG (C) 100 PSIG (D) 200 PSIG
49. Cylindrical and needle roller bearings are commonly found in :
- (A) Fans (B) Roller blades (C) Gear boxes (D) DC machines
50. Following are the methods of food preservation :
- (A) Dehydration (B) Hydration (C) Canning (D) Both (A) and (C)
51. A motor has 4 poles, its RPM is :
- (A) 1500 (B) 3000 (C) 750 (D) 500
52. Cooling performance test can only affectively done at ambient temperature above :
- (A) 60°F (B) 65°F (C) 70°F (D) 75°F

53. If we use solar panels to run a car AC then the mileage of car will :
- (A) Increase (B) Decrease
(C) Remain same as earlier (D) None of these
54. The main working substance in air conditioning is _____.
- (A) Dry air (B) Moist air
(C) Dry ice (D) Water vapour
55. The temperature at which moisture condenses on a surface is called _____.
- (A) Grains of moisture (B) Wet bulb temperature
(C) Dry bulb temperature (D) Dew point temperature
56. Scaling :
- (A) Means attaching a scale to system pipes for the length measurement.
(B) Is an instrument for measuring the length.
(C) Deposition of a layer of chemicals inside a water carrying pipe in a heat exchanger.
(D) None of these
57. What is DDC in HVAC system ?
- (A) Direct Decimal Classification (B) Direct Drive Control
(C) Direct Current (D) Direct Digital Control
58. Which valve allow fluid flow in only one direction ?
- (A) Ball valve (B) Butterfly valve
(C) Check valve (D) Shut-off valve
59. Cylinder colour code for R 22 is :
- (A) Light green (B) Orange
(C) Light gray (D) Light brown

68. Single phase motor is _____.
- (A) Shaft starting (B) Self starting (C) Not self starting (D) None of these
69. Liquid receiver in a vapour compression system is used in _____.
- (A) Suction line (B) Discharge line (C) Liquid line (D) Expansion line
70. HEPA stands for :
- (A) High Energy Particulate Air (B) High Efficiency Particulate Air
(C) High Effective Pressurized Air (D) High Entry Particulate Air
71. ADP represents :
- (A) Coil temperature (B) Coil pressure
(C) Coil point (D) None of these
72. GWP of R 134a refrigerant :
- (A) 1700 (B) 1300 (C) 800 (D) 650
73. Atmospheric pressure at sea level is :
- (A) 1.01325 bar (B) 14.7 PSI (C) 760000 Microns (D) All of these
74. Following is an HC refrigerant :
- (A) R 600a (B) R 12 (C) R 22 (D) R 134a
75. Capillary tube is used for _____.
- (A) Low capacity system (B) High capacity system
(C) Medium capacity system (D) None of these

76. What is the reason for poor condensation in Split AC ?
(A) Condenser fan motor failure (B) Sufficient air flow
(C) Condenser tubes are nice (D) Condenser fin damage
77. Which instrument is used for measuring humidity ?
(A) Hydrometer (B) Thermometer
(C) Hygrometer (D) Anemometer
78. ODP Value of HFC 134a :
(A) 1 (B) 3 (C) 0 (D) 2
79. De-superheating takes place in _____.
(A) Compressor (B) Discharge line (C) Condenser (D) Both (B) and (C)
80. The ratio of the sensible heat to the total heat is known as :
(A) Sensible heat factor (B) ADP
(C) Enthalpy (D) Relative humidity
81. The compressor motor in a hermetically sealed compressor is cooled by :
(A) Water (B) Air (C) Refrigerant (D) Nitrogen
82. Float valves are used in :
(A) Refrigerators (B) Large refrigeration systems
(C) Package units (D) Split AC
83. Velocity pressure is :
(A) Difference between Static pressure and Air pressure
(B) Difference between Total pressure and Static pressure
(C) Difference between Air velocity and Air pressure
(D) None of these

84. The unit of Resistance is _____.
- (A) Ohm (B) Farad (C) Volt (D) Ampere
85. The heart of the refrigeration system is _____.
- (A) Condenser (B) Evaporator (C) Liquid receiver (D) Compressor
86. Which line in Psychrometric chart as obliquely inclined straight lines and uniformly spaced ?
- (A) Relative humidity lines (B) Specific humidity lines
(C) Enthalpy (D) Specific volume
87. In star delta starter the main contactor is named as :
- (A) KM 1 (B) KM 2 (C) KM 3 (D) K1T
88. What is the purpose of adding dye in compressor lubricating oil to the Car AC system ?
- (A) Identify the gas leak (B) Lubricate the engine
(C) Adding performance (D) Improve efficiency
89. The relationship between rotor speed 'N', frequency 'f' and no. of poles 'P' given by the relation :
- (A) $N = 120f/P$ (B) $PN = 120f$ (C) $f = 120N/P$ (D) $N = 120P/f$
90. The coil has to be rinsed after de-scaling till the pH level comes to :
- (A) 5 to 5.5 (B) 6 to 6.5 (C) 7 to 7.5 (D) 8 to 8.5
91. The voltmeter can be used in _____.
- (A) Series connection
(B) Parallel connection
(C) Combination of both series and parallel
(D) None of these

92. During sensible heating of moist air, specific humidity :
- (A) Increases (B) Decreases
(C) Remains constant (D) None of these
93. The fresh air or ventilation air is a must in any comfort air conditioning system. Its purposes are _____.
- (A) to provide oxygen (B) to remove carbon dioxide
(C) to remove odours (D) All of these
94. Refrigerant propane has the designation _____.
- (A) R 11 (B) R 134a (C) R 290 (D) R 12
95. The expansion device used in central AC plant is :
- (A) AXV (B) TXV (C) Capillary tube (D) Solenoid valve
96. The chemical name of refrigerant R 134a is _____.
- (A) Propane (B) Dichloro difluoro methane
(C) Tetrafluoroethane (D) Monochlorodifluoroethane
97. Bourden tube is a _____.
- (A) Pressure measuring device (B) Volume measuring device
(C) Density measuring device (D) Temperature measuring device
98. Three TR is equivalent to _____ of cooling effect.
- (A) 5 kJ/s (B) 10.5 kW (C) 10 kJ/s (D) 7 kW
99. Dry Bulb Temperature (DBT) is the actual temperature of _____.
- (A) Dry air (B) Dry ice (C) Water vapour (D) Moist air
100. Tools used for making external threads is :
- (A) Taps (B) Die (C) Thread gauge (D) Drill

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SPACE FOR ROUGH WORK

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