

066/2016

Maximum : 100 marks

Time : 1 hour and 15 minutes

1. Sensible heat factor is :

(A) $\frac{\text{Sensible heat}}{\text{Latent heat}}$

(B) $\frac{\text{Total heat}}{\text{Sensible heat}}$

(C) $\frac{\text{Latent heat}}{\text{Sensible heat}}$

(D) $\frac{\text{Sensible heat}}{\text{Total heat}}$

2. Amount of heat required to raise the temperature of one pound of water through 1°C is called :

(A) C.H.U.

(B) B.T.U.

(C) Calorie

(D) Specific heat

3. Oil separator is filled in between :

(A) Condenser and evaporator

(B) On the suction line

(C) Compressor and condenser

(D) At the receiver outlet

4. H.F.C. should not vent into atmosphere because :

(A) It is flammable in atmospheric temperature

(B) It has high global warming potential

(C) It is highly toxic

(D) It is very costly gas

5. Process of changing solid into its vapour state without passing through liquid state is :

(A) super heating

(B) sublimation

(C) subcooling

(D) triple point

6. Latent heat of fusion of ice is :

(A) 335 kJ/kg

(B) 144 BTU/lb

(C) 80 kilo calories/kg

(D) all of the above

7. Sling psychrometer is used to measure :
- (A) only dry bulb temperature (B) only wet bulb temperature
(C) dry and wet bulb temperature (D) relative humidity
8. In air refrigeration refrigerating effect is produced by :
- (A) compressing air (B) expanding air
(C) subcooling (D) super heating
9. Accumulator is provided for :
- (A) storing of unvapourized liquid (B) storing of liquid refrigerant
(C) exchange of heat (D) condensing gas
10. In air conditioning of aeroplanes the refrigerant used is :
- (A) Ammonia (B) Freon 12
(C) Air (D) Water
11. Select the wrong characteristics of refrigerant :
- (A) low latent heat (B) low boiling point
(C) high thermal conductivity (D) none of these
12. The function of duct in air conditioning unit is :
- (A) air cooling (B) air cleaning
(C) air drying (D) air distributing
13. Commonly used refrigerant in commercial ice plant is :
- (A) Ammonia (B) Freon 12
(C) Air (D) CO₂
14. The C.O.P. of a domestic refrigerator in comparison to domestic air conditioner will be :
- (A) more (B) same
(C) less (D) unpredictable
15. An Air washer can work as :
- (A) Humidifier (B) Dehumidifier
(C) Filter (D) All the above

16. The brine is always used as a secondary refrigerant in :
- (A) cold storage (B) milk chilling plant
(C) ice plant (D) none of these
17. In winter air conditioning the process used is :
- (A) Dehumidification (B) Heating and humidification
(C) Humidification (D) Cooling and dehumidification
18. At which point °C scale and °F scale will be same :
- (A) -40° (B) 0°
(C) 273° (D) 40°
19. Sub cooling is a process of cooling the refrigerant in vapour compression refrigeration system before :
- (A) Evaporation (B) Throttling
(C) Condensation (D) Compression
20. The milk is stored at a temperature of :
- (A) -5°C (B) 10°C
(C) 0°C (D) 4°
21. Absolute zero temperature is taken as :
- (A) -273°C (B) 273°C
(C) 237°C (D) 0°C
22. A thermostatic expansion valve function with :
- (A) suction pressure (B) discharge pressure
(C) discharge temperature (D) suction temperature
23. For ammonia refrigerating system the tubes of a shell and tube condenser are made of :
- (A) Copper (B) Aluminium
(C) Steel (D) Brass

24. Convert from CFC 12 to HFC 134 A the compressor displacement will be :
- (A) smaller (B) equal
(C) slightly larger (D) double
25. The type of condenser used in water cooler :
- (A) natural draft (B) forced draft
(C) evaporative (D) water cooled
26. Pump down the system for :
- (A) more cooling effect (B) to check compressor efficiency
(C) gas charging (D) to attend maintenance in low side
27. Purging is done :
- (A) after gas charging (B) before gas charging
(C) before vacuumizing (D) before pressurising
28. The refrigerant enters in the condenser by the :
- (A) top side (B) last coil
(C) bottom side (D) middle tube
29. One ton refrigeration is equal to :
- (A) 210 kj/min (B) 12600 kj/hour
(C) 3.5 kj/sec (D) all of the above
30. Liquid charged in thermostatic expansion valves sensing bulb is :
- (A) alcohol (B) same refrigerant
(C) mercury (D) nitrogen
31. Solenoid valve operated by :
- (A) electrically (B) hand
(C) gas pressure (D) oil pressure
32. The colour of the flame of halide torch in case of leakage of Freon refrigerant will change to :
- (A) yellow (B) red
(C) bright green (D) orange

33. Which type of valve is used in a reciprocating refrigeration compressor?
- (A) rotary valve (B) poppet valve
(C) ring plate (D) glob valve
34. The presence of frost on the cooling coils of the evaporator of a refrigeration system :
- (A) increases the compressor pressure
(B) act as the insulator and decreases the heat transfer rate
(C) makes the compressor run for comparatively short durations
(D) reduce the life of cooling coils
35. Dry ice is :
- (A) solidified carbondioxide
(B) ice free from dissolved air and gases
(C) ice free from impurities
(D) ice made from transparent distilled water
36. Which of the following machines can be used to obtain refrigeration at places where there is no electric power?
- (A) air refrigeration (B) steam jet refrigeration
(C) vapour compression (D) vapour absorption
37. Rectifiers are used for converting :
- (A) voltage into current (B) AC to DC
(C) DC to AC (D) voltage in to velocity
38. The operation theatre in a hospital is to be air conditioned suggest the percentage of outside air being circulated in the theatre :
- (A) zero (B) 20
(C) 50 (D) 100
39. The difference between D.B.T. and W.B.T. is called :
- (A) wet bulb depression (B) dew point depression
(C) effective temperature (D) adiabatic saturation temperature

40. The absolute zero temperature corresponds on the condition when :
- (A) all the substances exit only as solids
 - (B) volume of a gas reduces to zero
 - (C) kinetic energy of gas molecules become zero
 - (D) no pressure is exerted by the gas
41. The oil used with 134 A refrigerant is :
- (A) Mineral oil
 - (B) Capilla D
 - (C) Polyol ester oil
 - (D) Lubricating oil
42. Cripser temperature of refrigerator is equal to :
- (A) 0°C
 - (B) 8°C
 - (C) -5°C
 - (D) None of the above
43. Auto defrost operated by :
- (A) Evaporator fan
 - (B) Thermostat
 - (C) Timer switch
 - (D) Heating element
44. Dehydrator is installed in the :
- (A) liquid line
 - (B) discharge line
 - (C) suction line
 - (D) charging line
45. The device which used to find relative humidity :
- (A) Pyrometer
 - (B) Anemometer
 - (C) Hydrometer
 - (D) Hygrometer
46. Chemical name of Freon 22 is :
- (A) Dichloro difluoro methane
 - (B) Monochloro difluoro methane
 - (C) Trichloro monofluoro methane
 - (D) Dichloro monofluoro methane
47. The capacity of visible cooler is expressed in :
- (A) cubic feet
 - (B) litres
 - (C) k.cal/TR
 - (D) tons of refrigeration
48. Which of the following refrigerant has the lowest boiling point?
- (A) Carbon dioxide
 - (B) Ammonia
 - (C) Sulphur dioxide
 - (D) Freon 12

49. HFC 134 A appliance has capillary length when compare to CFC unit :
- (A) 10% to 20% more (B) 20% short
(C) 50% longer (D) same length
50. The effectiveness of the cooling tower is dependent on :
- (A) Dry bulb temperature of the air (B) Direction of the flow of air
(C) Wet bulb temperature of the air (D) None of the above
51. Milky white ice obtained if :
- (A) impurities are present in water
(B) due to the presence of CO₂
(C) by keeping in an insulated chamber
(D) air is present in it
52. In a shell and coil condenser :
- (A) water flows in the shell and refrigerant in the coil
(B) only refrigerant flows through the shell as well as coil
(C) only water flows through the shell as well as coil
(D) water flows in the coil and the refrigerant in the shell
53. In a thermal electric expansion valve which senses the suction temperature is :
- (A) Transformer (B) Thermister
(C) Thermostat (D) Rheostat
54. In a flooded evaporator which of the following types of expansion, device is employed :
- (A) float valve (B) capillary tube
(C) automatic expansion valve (D) thermostatic expansion valve
55. In an ice plant the function of brine agitator is :
- (A) to increase COP (B) to reduce compressor power
(C) to obtain uniform temperature (D) to super heat the refrigerant gas
56. In an air conditioning system the comfort conditions are defined by :
- (A) 15°C DBT 90% RH (B) 25°C DBT 35% RH
(C) 20°C DBT 80% RH (D) 22°C DBT 60% RH

57. The electrical component of automobile air conditioner allows to engage and disengage the compressor from the thermostat :
- (A) Rheostat (B) Thermostat
(C) Fuse (D) Magnetic clutch
58. Sum of atmospheric pressure and gauge pressure is called :
- (A) Total pressure (B) Absolute pressure
(C) Normal pressure (D) Natural pressure
59. The diode used for voltage regulation is :
- (A) Rectifier diode (B) Signal diode
(C) Zener diode (D) Vari cap diode
60. The specific humidity is the mass of water vapour present in :
- (A) 1 kg of dry air (B) 1 m³ of dry air
(C) 1 m³ of wet air (D) 1 kg of wet air
61. Which one of the following oxy fuel gas flames has the highest flame temperature?
- (A) Oxy hydrogen (B) Oxy acetylene flame
(C) Oxy coal gas flame (D) Oxy LPG flame
62. A micrometer has a positive error of 0.02 MM. What is the correct reading when the micrometer measures 25.37 MM :
- (A) 25.35 MM (B) 25.43 MM
(C) 25.39 MM (D) 25.41 MM
63. One micron of vacuum is equal to :
- (A) 0.1 MM Hg (B) 0.01 MM Hg
(C) 0.001 MM Hg (D) 0.0001 MM Hg
64. Start the compressor without relay to short :
- (A) C and S terminal (B) S and R terminal
(C) C and R terminal (D) Compressor body and S terminal
65. There is no relay and starting capacitor in :
- (A) CSR circuit (B) CSIR circuit
(C) RSIR circuit (D) PSC circuit

66. Stabilizer used for 1.0 TR AC is :
- (A) 2 KVA (B) 3 KVA
(C) 4 KVA (D) 5 KVA
67. Select the period of interval for a defrost cycle in a frost free refrigerator :
- (A) once in 12 hours (B) once in 24 hours
(C) once in 36 hours (D) once in 48 hours
68. Select the boiling point of refrigerant 134 A at 1 atmosphere :
- (A) -31.5°C (B) -29.8°C
(C) -26.1°C (D) -11.8°C
69. Most important property of insulating material is :
- (A) odourless (B) easy to handle
(C) light in weight (D) low conductivity
70. The component which control the bimetal thermostat is :
- (A) Defrost heater (B) Fan motor
(C) Overload protector (D) P.T.C. Relay
71. HC refrigerant using systems should be vacuumized upto :
- (A) 2000 Microns Hg (B) 500 Microns Hg
(C) 100 Microns Hg (D) 1000 Microns Hg water
72. When compare to CFC 12 the charge of 134 A will be :
- (A) 90% to 95% (B) 25% extra
(C) same weight (D) twice quantity
73. The swash plate compressor is most frequently used in :
- (A) Refrigerators (B) Window air conditioners
(C) Split air conditioners (D) Car air conditioners
74. Which of the following refrigerant has the lowest freezing point?
- (A) Ammonia (B) Freon-11
(C) Freon-22 (D) Freon-12

75. A mechanical shaft seal is necessary in a :
- (A) open type compressor (B) semi hermetic compressor
(C) hermetic rotary compressor (D) hermetic reciprocating compressor
76. While recovery the cylinder can be charged maximum upto :
- (A) 95% (B) 80%
(C) 60% (D) 45%
77. The component common for vapour compression and vapour absorption system is :
- (A) Rectifier (B) Condenser
(C) Generator (D) Absorber
78. Modification of R.12 to R 134 A refrigerant is called :
- (A) recharging (B) recovery
(C) retrofit (D) none of the above
79. The fire micron filter is named as :
- (A) catch air filter (B) rough filter
(C) bag filter (D) fine filter
80. Water inlet flow of the water cooler is controlled by :
- (A) expansion valve (B) solenoid valve
(C) pressure regulating valve (D) float valve
81. The Environment Protection act of India came into force on :
- (A) 19 November 1986 (B) 19 November 1968
(C) 29 November 1998 (D) 29 November 1989
82. Who is the author of the work "Brahmotharakandom"?
- (A) Vaikundaswamy (B) Makkidi Labba
(C) Ayyavu Swamikal (D) Padmanabhan Vaidyan
83. Which was known as the "Magna Carta of the Travancore Ryots"?
- (A) Temple Entry Proclamation (B) Paliyam sathyagraha
(C) Malayalee Memmorial (D) Pandara Pattam Proclamation

84. "Swaraj Bhavan" is the office complex situated in Thiruvananthapuram. Which one is not situated in this complex?
- (A) Information Kerala Mission (B) Suchitwa Mission
(C) Kudumbasree Mission (D) None of these
85. In which year Benjamin Bailey published first English Malayalam Dictionary?
- (A) 1866 (B) 1846
(C) 1686 (D) 1864
86. During the Civil Disobedient Movement in Kerala British arrested the leaders except :
- (A) K. Madhavan Nair (B) K. Kelappan
(C) Sarojini Naidu (D) Muhammed Abdul Rahiman
87. The place where the Fifth Malabar District Political Conference held on 28th April 1926 in the presence of Annie Besent adopted a resolution rejecting Motague Chelmsford reforms :
- (A) Vadakara (B) Manjeri
(C) Ottappalam (D) Manjeswaram
88. The First Malayalam Newspaper Rajyasamacharam was published in 1847 from :
- (A) Illikkunnu (B) Nellikunnu
(C) Kottayam (D) Kollam
89. Purogamana kalasahithya Sangam was formed on 14th August 1981 under the leadership of :
- (A) M K Sanu (B) M N Vijayan
(C) S Radhakrishnan (D) Vylopilli Sreedharamenon
90. The Freedom Fighter popularly known as "Jhansi Rani of Travancore" :
- (A) Accama Cheriyan (B) Rosamma Punnose
(C) Captain Lakshmi Seghal (D) None of These
91. The Social Reformer started an education Journal "Vidyalayam" in 1919 :
- (A) C. Krishnan (B) G P Pillai
(C) Moorkkothu Kumaran (D) C V Kunjuraman

92. The place where Ayyathan Gopalan founded Chandavarkar Elementary School to encouraging education among Dalits :
- (A) Malappuram (B) Kozhikkode
(C) Palakkad (D) Idukki
93. The author of the fantasy novel "Blue jasmine" :
- (A) M.V. Devan (B) P.K. Gopi
(C) R. Leeladevi (D) U.K. Kumaran
94. Which Constitution Amendments provides for the formation of National Judicial Appointment Commission in 2013?
- (A) 95 (B) 98
(C) 96 (D) 99
95. First women Chief Election Commissioner of India :
- (A) Fathima Beebi (B) Durga Bannerjee
(C) Kiranbedi (D) V S Ramadevi
96. NDA government recently launched a new Pension Scheme in India is :
- (A) Atal Bima Yojana
(B) Prathanmanthri Jeevan Jyothi Bima yojana
(C) Prathanmanthri Suraksha Bima Yojana
(D) Prathanmanthri Jan Dhan Yojana
97. Rajiv Gandhi Khel Ratna Award 2015 given to :
- (A) Sania Mirza (B) M.R. Poovamma
(C) Naib Subedar Sandeep kumar (D) Ronjan Sodhi
98. Who is the Present Loksabha Deputy Speaker of India?
- (A) Karia Munda (B) Charanjith Singh Atwal
(C) M Thambidurai (D) P M Sayeed
99. Which one is not related with RAW ?
- (A) Sanjeev Thripathi (B) Rajinder Khanna
(C) Alok Joshy (D) None of These
100. In the Census 2011 Which state is the highest Density of Population of India?
- (A) Maharashtra (B) Delhi
(C) Gujarath (D) Kerala