PPSC Physics Chapter 3 Thermal Properties of Matter

Sr	Questions	Answers Choice
1	When all the systems taking part in a process are included, the entropy.	A. Decreases B. Either remains constant of increases C. Either remains constant or decreases D. Remains constnat
2	How many calories of heat are required to evaporate completely 1 g of ice at 0 ^{O}C	A. 480 calories B. 720 calories C. 940 calories D. 1170 calories
3	A mercury in glass thermometer and thermocouple thermometer are both calibrated using the same fixed point of 0 oC and 100 oc when both temperature are used to measure the temperature of a body the temperature measured on both thermometers will be exactly the same	A. For all temperatures between 0 oC and 100 o C only B. Only are the fixed points C. For all temperatures at all times D. When converted to the Kelvin scale
4	The pressure of a gas is directly proportions to	A. Mean velocity of the molecules B. Mean square velocity of the molecules C. Root mean square velocity of the molecules D. Instantaneous velocity of the molecules
5	How many calories of heat are required to evaporate completely 1 g or ice at 0 ^{O}C	A. 120 calories B. 520 calories C. 720 calories D. 920 calories
6	Contrivances for converting heat into work are called.	A. Heat pumps B. Heat engines C. IC engines D. Jet engine
7	The term used for heat capacity per unit mass is.	A. Latent heat B. Specific heat C. Energy density D. Specific energy
8	The ratio of specific heat capacity to motor heat capacity of a body	A. Is a universals cantante B. Depends upon the mass of the body C. Depends upon the molecular weight of the body D. Is dimensionless
9	Which kind of motion is exhibited by molecules of monoatomic gas.	A. Rotatory B. Vibratory C. Translatory D. Random
10	The internal energy of monoatomic gas is.	A. 3/2 RT B. Independent of temperature C. In the form of K.E. D. Partially kinetic and partially potential
11	When a liquid is hated retaining its liquid sate then its molecules gain.	A. K.E. B. P.E C. Heat energy D. Chemical energy
12	An immersion heater rated at 150 W is fitted into a large block of ice at 0 oC. The specific latent heat of fusionism 300 J g-1. How long does it take to melt 10 g of ice.	A. 5 s B. 10 s C. 15 s D. 20 s
13	Which of the following is a clinical thermometer.	A. Gas thermometer B. Mercury thermometer C. Alcohol thermometer D. Radiation thermometer

14	What is the average K.E. of gas molecules at temperature equal to K.	A. kt/3 B. 3/2 KT C. 1/2 KT D. 2/3 KT
15	Efficiency of a Carnot engine depends on	A. Temperature B. Pressure C. Volume D. The nature of working substance
16	According to kinetic energy of gases one assumes that the collisions between the molecules are.	A. Perfectly elastic B. Perfectly inelastic C. Partly elastic D. Partly inelastic
17	Which of the following is defined as the amount of heat required to raise the temperature of 1 g of water by 1 ^{O}C	A. Joule B. BTO C. Electron volt D. Calorie
18	Efficiency of a Carnot engine can never be 1 or 100% unless cold reservoir is at absolute temperature.	A. 0 K B. 100 K C. 273 K D. 373 K
19	Certain gas are called permanent gases because.	A. They cannot be liquified B. They are perfect gases C. The critical temperatures are low D. their boiling points are low
20	Net change in entropy of a system in a Carnot's cycle in	A. Positive B. Negative C. Zero D. Infinite
21	The ideal thermal efficiency of a cyclic heat engine is limited by	A. Friction in the engine B. Amount of heat in the engine C. Difference between input temperature and output temperature. D. Amount of work
22	Difference between the molar heat capacity constant pressure and that a constant volume is equal to	A. Root mean square velocity B. Mean free path C. Boltzmann's constant D. Universal gas constant
23	The specific heat of all gases increases with temperature at high temperature decreases at low temperature expectation is	A. Oxygen gas B. Nitrogen gas C. Mono atomic gas D. Dia atomic gas
24	On which parameter, the heat capacity of a material depends upon.	A. Density of the material B. Specific heat of the material C. Temperature of the material D. Structure of the material
25	The process in which no heat enters or leaves the system is called.	A. Isdobaric B. Isochoric C. Isothermal D. Adiabatic
26	An ideal engine can be 100% efficient only if its exhaust temperatute.	A. Equal to input temperature B. Less than is input temperature C. More than its input temperature D. 0 ^oC
27	If pressure and temperature of an ideal gas is doubled and volume is halved, the number of the gas molecules.	A. Become half B. Remain constant C. Become double D. Become three times
28	An ice making machine extracts energy at the rate of 500 W The specific latent heat of fusion of ice is 300 kj kg-1. How long does it take to freeze 2 kg of water at 0 oC.	A. 120 s B. 150 s C. 1200 s D. 1500 s
29	A standard fixed point for calibrating a thermometer is.	A. Boiling point of water B. Melting point of ice C. Temperature of steam D. Triple point of water
30	Which of the following parameters does not characterize the thermodynamic state of matter.	A. Temperature B. Pressure C. Volume D. work
31	The heat required to sublime one mole of the substance at standard temperature and pressure is called	A. Latest heat B. Specific heat C. Heat of sublimation

	pressure is called.	C. Heat of sublimation D. Heat capacity
32	Why an even Carnot engine Carnot give 100% efficiency.	A. We cannot find ideal sources B. We cannot eliminate friction C. We cannot reach absolute zero temperature D. We cannot remove heat
33	When a fluid in a cylinder expands through a distance 'd' against a piston of area 'A' which is exerting a constant pressure 'P' the work done is equal by.	A. PAD B. PA/d C. Pd/A D. Pd/A2
34	Which one of the following is an example of a reversible process.	A. Work done against friction B. Heat produced by current C. Melting of ice D. See back effect
35	What is the total entropy change during an reversible cycle.	A. Unity B. Infinite C. Zero D. Cannot be detected
36	The ratio between the energy dissipated in some process and the heat that appears as a result is the	A. Specific heat B. Mechanical equivalent of heat C. Kilocalories D. Triple point
37	Because of second law of thermodynamics about the direction of energy flow what is possible.	A. Heat B. Light C. Energy D. life
38	During solid ficain the temperature.	A. Remains constant at the freezing point B. Increases at the freezing point C. Decreases at the freezing point D. Decreases at the melting point
39	On which temperature scale a degree is 1/180 of the interval between the freezing point and the boiling point.	A. Celsius scale B. Fahrenheit scales C. Rankine scale D. Kelvin scale
40	The temperature of a certain substance in Celsius scale of temperature is 800 ^{O}C in Kelvin scale it is.	A. 173 K B. 931 K C. 1073 K D. 1193 K
41	On which parameter internal energy of an ideal gas depends upon.	A. Volume B. Mass C. Pressure D. Temperature
42	Internal energy of a gas decreased when	A. It gains heat B. Change in cycle C. Change in adiatatic D. Change in reversible
43	When a solid is melting the temperature remains constant even through heat is being supplied because the	A. Heat is being used to break up the intermolecular bonds B. Solid is not absorbing any heat C. Molecules are moving faster D. Molecules are farther a part
44	Which quantity provides a quantitative measure of disorder.	A. Entropy B. Enthalpy C. Randomness D. Chaos
45	The actual gas can behave like an ideal gas at	A. Low density and high pressure B. High density and high pressure C. Low density and low pressure D. High density and low pressure
46	When ever a system is made to complete a cyclic process the work done during the complete cycle.	A. Is zero B. Is negative C. Is positive D. Depends upon the path followed
47	A Carnot engine has the same efficiency between (i) 100 K and 500 K and ii) T and 900 K What will be T.	A. 90 K B. 100 K C. 180 K D. 200 K
48	When a perfect gas is supposed to expand freely in an isolated vessel the gas has undergone.	A. An increase in pressure B. An increase in temperature C. A change in phase D. A change in entropy

		D. A change in entropy
49	Which one of the following temperature scales is independent of the properties of any particular substance.	A. Kelvin scale B. Gas scale C. Thermodynamic scale D. Celsius scale
50	A convention current is the movement of fluid caused by the change in.	A. Pressure B. Temperature C. Densities D. Volume
51	The efficiency of Carnot engine is	A. Less than one B. Zero C. Greeter than one D. Infinite
52	How do solar heat and light reach the Earth.	A. By radiation B. By convection C. By conduction D. By conduction and convection
53	The law of equation of energy is applicable to the system whose constituents are.	A. At rest B. In orderly motion C. in random motion D. Moving at constant speed
54	Which of the following is a non contacting device that intercepts and measures thermal radiation.	A. Thermometer B. Pyrometer C. Voltmeter D. Lactometer
55	Mean free path in a gas is the	A. Distance travelled by a molecule before hitting a wall B. Average distance travelled by a molecule in one second C. Average distance travelled between molecules between any two successive collisions D. Root mean square velocity
56	Convention is the transfer of thermal energy by means of currents in	A. Pressure B. Temperature C. Liquids D. Fluids
57	What is the amount of mechanical work done to melt 1 g of ic completely	A. 4.2 J B. 42 J C. 80 J D. 336 J
58	The total gain in entropy of the working substance in a Carnot cycle is.	A. Positive B. Negative C. Infinite D. Constant
59	The amount of heat needed per unit mass to raise the temperature of a system one degree at constant pressure is numerically aqual to	A. The specific heat B. The specific thermal energy C. The specific heat at constant pressure D. the internal energy of the gas
60	Which kind of thermodynamic process is defined as with no heat transfer into or out of a system i.e. Q =0	A. Isobaric process B. Isochoric process C. Isothermal process D. Adiabatic process
61	Which of the following can be used visualize the third law thermodynamics	A. Light B. Heat C. Water D. All of these
62	Which law states that if two systems are in thermal equilibrium with a third system they are also in the thermal equilibrium with each other.	A. Third law of thermodynamics B. Second law of thermodynamics C. First law of thermodynamics D. Zeroth law of thermodynamics
63	A sample of an ideal gas may i) energy adiabatically, or ii) Expand isothermally. the net flow of heat into the gas from the exterior is.	A. Positive is each case B. Negative for i) and positive for ii) C. Zero for i) and positive for ii) D. Positive for i) and negative for ii)
64	In onw cycle of a steam engine there are how many dead centres.	A. 1 B. 2 C. 3 D. zero
65	If the pressure of a gas is doubled, then its thermal conductivity will	A. Increases B. Decreases C. Remain constant

		C. Remain constant D. Be zero
66	In an isobaric process there is no.	A. Pressure change B. Internal energy change C. Heat exchanged D. volume change or work done
67	The Fahrenheit and Kelvin scales intersect at	A. 40 B. -40 C. 140 D. -140
68	Which of the following is an example of irreversible process.	A. Melting of ice B. Work done against friction C. Pettier heating and cooling D. All isothermal and adiabatic changes
69	Thermodynamics deals with	A. Isolated systems B. The interactions among various parts of the system C. The microscopic behavior of a system D. The interactions between system and surrounding
70	A heat engine with 100% efficiency would have to	A. Do no work B. Be at a uniform temperature C. Use no heat D. Discharge at 0^oC
71	If the specific latent heat of vaporization of oxygen is 214 kJ kg-1 how much heat will be absorbed when 3.0 kg of oxygen is boiled off at its boiling point.	A. 14 kJ B. 64 k J C. 140 kJ D. 642 k j
72	The internal inertia of a thermodynamics system is known as.	A. Enthalpy B. Entropy C. Isotherm D. Adiabatic
73	A perfect gas is one whose	A. Molecules are masless B. Molecules are energetic C. Molecules are perfectly elastic D. Molecules are at rest
74	The temperature of 1 kg of hydrogen gas is the same as that of 1 kg of helium gas if.	A. The gases have the same internal energy B. The gas molecules occupy equal volumes C. The gas molecules have the same root mean square speed D. The gas molecules have same mean translational K.E.
75	The pressure necessary to liquify a gas at the critical temperature is called.	A. Normal pressure B. Atmospheric pressure C. Critical pressure D. Liquid pressure
76	If a gas does 10 J of external work white expanding then the change in internal energy is equal to.	A. 0 J B. 10 J C. -10 J D. 100 J
77	Two stem engine A and B have their sources at 900 K and 600 K and their sinks are at 450 K and 300 K respectively.	A. They are equally efficient B. A is less efficient than B C. a is more efficient than B D. Their efficiencies cannot be determined
78	First law of thermodynamics is a	A. Boyle 's law B. Charles' law C. Law of energy conservation D. Steffen Boltzmann law
79	Which of the following should not change in an Isothermal process.	A. Volume B. Pressure C. Temperature D. All of these
80	Gas exert pressure on walls of the visual because gas molecules.	A. Posses momentum B. Have finite volume C. Collide with each other D. Obey gas laws
81	In free expansion of a gas, the internal energy of the system.	A. Increases B. Descreases C. Remain unchanged

		C. Remain unchanged D. Becomes infinite
82	The ration Cv/Cp = y for a diatomic gas like air is	A. 1.29 B. 1.30 C. 1.40 D. 1.67
83	Which quantity must be the same for two bodies if they are to be in thermal equilibrium.	A. Internal energy B. P.E C. Temperature D. Mass
84	The temperature which is the same in ^{O}C and ^{O}F is.	A. -20 B. -40 C. 20 D. 40
85	What is the represented by the area inside the Carnot cycle.	A. Heat taken to increase the body temperature. B. Energy loss due to leakage C. Useful work done D. Heat rejected by the system
86	In order of a cyclic heat engine operating between two heat reservoirs to be as efficient as a Carnot engine. It must be.	A. A gas engine B. Adiabatic C. Reversible D. A refrigerator
87	The process in which pressure of the system remains constant.	A. Isothermal process B. Isochoric process C. Isobaric process D. Adiabatic process
88	What is a measure of the total energy of a thermodynamics system.	A. Entropy B. Enthalpy C. Randomness D. Chaos theory
89	How does heat transfer between objects.	A. From cold to hot objects B. From hot to cold objects C. By electromagnetic radiations D. From hotter to hottest objects.
90	The mechanical equivalent of heat is.	A. Physical quantity B. Constant C. Conversion factor D. Zero
91	At the temperature of -273 ^{O}C. pressure of a gas at constant volume becomes zero This specific temperature is called.	A. Freezing point B. Critical temperature C. Absolute zero D. Terminal point
92	The process in which a system undergoes a change of state at constant volume.	A. Isobaric process B. Isochoric process C. Isothermal process D. Adiabatic process
93	Under steady state the temperature of a body	A. Increase's with time B. Decreases with time C. Does not charge with time D. None of the above
94	If the gas pressure is increased then its mean free path becomes.	A. More B. Zero C. Infinite D. Less
95	The mechanical equivalent of heat	A. Has the same dimension as heat B. Has the same dimension as work C. Has the same dimensions as energy D. Is dimensionless
96	Mean free path of gas molecules is inversely proportional to its.	A. Volume B. Pressure C. Temperature D. Weight
97	What type of process is the Carnot's cycle.	A. Reversible B. Irreversible C. Neither reversible nor irreversible D. May be reversible or irreversible
98	A cup of coffee at 80 ^{O}C is left to cool to 30 oc if the heat capacity of the cup and coffee is 2.0 kJ k-1 how much heat is released during the cooling.	A. 0.04 kJ B. 100 KJ C. 60 kJ D. 160 kJ

		D. 100 kJ
99	The specific heat of a substance is a function of its	A. mass B. Weight C. Volume D. Molecular structure
100	What is the internal energy of a mono atomic ideal gas.	A. Potential only B. Parity kinetic and parity potential C. Kinetic only D. Neither kinetic nor potential
101	Mean free path of gas molecules in inversely proportional to its.	A. Weight B. Temperature C. Pressure D. Volume
102	Which one is the primary standard for temperature measurement.	A. Resistance thermometer B. Mercury in glass thermometer C. Constant volume gas thermometer D. Pyrometer
103	The heat accepted and rejected by a Carnot engine operating between two heat reservoirs defines.	A. The efficiency of the working substance of the engine B. the ideal gas scale of temperature C. The ratio of the absolute temperature of the reservoirs D. The thermal capacity of the working substance
104	Below which temperature gas can be liquified by increasing its pressure.	A. Natural temperature B. Boyle temperature C. Critical temperature D. Absolute zero
105	Entropy of universe is increasing day by da due to.	A. Power generating processes B. Energy used into work C. Depletion of ozone D. All of the above
106	Which of the following is an example of an irreversible process.	A. Isothermal and adiabatic process B. Melting of ice C. Work done against friction D. Pettier effect
107	Which of the following pairs represent units of the same physical quantity.	A. Kelvin and joule B. Kelvin and calrorie C. Newton and calorie D. Joule and calorie
108	Triple point of water in Kelvin scale is	A. 0 K B. 100 K C. 273 .15 K D. 373.15 K
109	The number of molecules or atoms in a specific volume of a gas is independent of their	A. Volume B. Pressure C. Size D. Temperature
110	The average K.E. of the molecules of an ideal gas in a closed rigid container is increased by a factor of 4 What happen to the pressure of the gas.	A. It remains the same B. It increases by a factor of 2 C. It increases by a factor of 4 D. It increases by a factor of 8
111	Law of increase of entropy is a result of	A. First law of thermodynamics B. Second law of thermodynamics C. Third law of thermodynamics D. Zeroth law of thermodynamics
112	What is the mean free path in a gas.	A. The distance travelled by a molecule before hitting a wall B. the average distance travelled by a molecule in one second C. the average distance travelled by molecules in one second D. The root mean square velocity
113	Under an isothermal process internal energy of the system.	A. Increases B. Decreases C. Remain constant D. is Zero
114	The phenomenon of Brownian motion shows that	A. Molecules exist and can be seen as bright dots moving about B. Molecules moves about randomly at highs speeds C. Smoke particles behaves as molecules

		D. Smoke particles can be used as models of air molecues.
115	Which of the following has negative specific heat	A. Ne B. CO2 C. O2 D. Sturated vapours
116	The transfer of thermal energy between regions of matter due to a temperature gradient is called.	A. Conduction B. Radiation C. Convection D. Sublimation
117	Temperature of a system remains constant in	A. Adiabatic process B. Isobaric process C. Isothermal process D. Isochoric process
118	Which of the following devoices are used for measuring temperature.	A. Thermocouples B. Thermistors C. Thermometers D. All of these
119	if temperature eon Celsius scale is 50 oC the temperature on Fahrenheit scale will be.	A. 102 ^oF B. 108 ^oF C. 112 ^oF D. 122 ^oF
120	Temperature of a gas is related to.	A. Total K.E. of the gas molecules B. The K.E. of the centre of mass of the gas C. The P.E. of the centre of mass of the gas D. Total K.E. of the molecules w.r.t the centre of mass of gas
121	The pressure of a goas is directly proportion to	A. Mean velocity of the molecules B. Mean square velocity of the molecules C. Root mean square velocity of the molecules D. Instantaneous velocity of the molecules
122	Let at constant temperature the pressure of an ideal gas be doubled so that the new volume is.	A. Doubled the original volume B. Same as original volume C. Reduced to half the original volume D. Reduced to two times the original volume
123	Real gases obey gas laws only at	A. Low pressure and high temperature B. High pressure and low temperature C. High pressure and high temperature D. Low pressure and low temperature
124	The highest efficiency of a heat engine whose low temperature is 17 oC and the high temperature of 200 oC is.	A. 20% B. 30% C. 35% D. 40%
125	Heat Carnot be transferred from a colder to a hotter region unless work is done This is the statement of.	A. Firs law of thermodynamics B. Second law of thermodynamics C. Third law of thermodynamics D. Zeroth law of thermodynamcis
126	Difference between Cp and Cv is equal to	A. General gas constant B. Planck's conatant C. Molar gas constant D. Boltzmann's constant
127	Which of the following should not change in isothermal operation.	A. Heat constant B. Volume C. Pressure D. Temperature
128	Which of the following is heat transfer by means of the emission or absorption of electromagnetic radiation such as sunshine.	A. Conduction or diffusion B. Convection C. Radiation D. Mass transfer
129	According to kinetic theory of gases one assumes that the collisions between molecules are.	A. Perfectly elastic B. Perfectly inelastic C. Partly elastic D. Partly inelastic
		A. Gases have a small coefficient of

130	Advantage of using gases as thermornetic substrates is taht	A. Gases have a small coefficient of expansion B. Expansion of gases is irregular C. Gases can be obtained in pure form D. Gases have a large coefficient of expansion.
131	The expression PV/KT represents.	A. Number of moles of the gas B. Number of molecules in the gas C. Total mass of the gas D. Density of the gas
132	Which quantity is common for systems in thermal equilibrium.	A. Heat B. Temperature C. Momentum D. Specific heat
133	In which thermodynamic process enthalpy of the system remains constant.	A. Isenthalpic process B. Isolated process C. Isobaric process D. Isochoric process
134	If the temperature of the source and sink are increased by same amount the efficiency of the engine.	A. Increases B. Decreases C. Remains unchanged D. May increases of decrease
135	Gases exert pressure on walls of the vessels because gas molecules.	A. Possess momentum B. Have finite volume C. Collide with each other D. Obey gas laws
136	Absolute zero may be regarded as the temperature of which	A. Water freezes B. All substances are solids C. All gases become liquids D. Molecular motioning a gas would ceases
137	On increasing the temperature of source efficiency of Carnot engine.	A. Increase B. Decrease C. First increases and then decreases D. Does not change
138	Specific heat a different substances varies becouse of	A. Same number of molecules in unit mass B. Different number of molecules in unit mass C. Different K.E. of molecules in unit mass D. Same K.E. of molecules in unit mass
139	Which of the following has maximum specific heat.	A. Glass B. Iron C. Brass D. Lead
140	Thermal conduction in metals differs from thermal conduction in insulators,. The reasons for this is that , in metals heat can be transported by.	A. Electrons B. Lattice vibrations C. Photons D. Positive ions
141	The gas temperature is increased from 27 ^{o}C to 127 ^{o}C What is the ratio of mean kinetic energies.	A. 3/4 B. 4/3 C. 9/10 D. 10/9
142	A diatomic gas contains only	A. Translational K.E. B. Rotational K.E. C. Vibrational K.E. D. All of these
143	If two gases have same reduced pressure volume and temperature it is according to	A. Boyle's law B. Charles law C. Law of corresponding state D. Zeroth law
144	What is the human body temperature in Celsius scale.	A. 30 oc B. 36. 9 oC C. 98. 4 oC D. 100 oC
145	A given quantity of an ideal gas is at pressure P and temperature T What is the isothermal bulk modulus of the gas.	A. 2/3 P B. P C. 2P D. 3/2 P

146	In which given process does the system always return to the original thermodynamic state.	A. Cyclic B. Adiabatic C. isothermal D. Isobaric
147	Significant motion for the molecules of a monoatomic gas is.	A. Rotatory B. Vibratory C. Translatory D. Random
148	When a hot liquid is mixed with a cold liquid temperature of the mixture.	A. First decreases and then becomes constant B. First increases and then becomes constant C. Continuously decreaes D. Is undefined for some time and then nearly becomes constant
149	Which thermodynamic law state taht the entropy of a perfect system approaches zero.	A. Zeroth law of thermodynamics B. First law of thermodynamics C. Second law of thermodynamics D. Third law of thermodynamics
150	Which law states that two given samples of an ideal gas at the same temperature pressure and volume contain the same number of molecules.	A. Charles law B. Avogadro's C. Boyles law D. Boizmann law
151	The door of an operating refrigerator in a closed room is opened after sometime the temperature of the room will be	A. Lowered B. Raised C. Unaffected D. Become zero
152	What kind of movement is dictated by the laws of thermodynamcis.	A. Energy motion B. Heat work C. Light heat D. Energy light
153	Identify the irreversible process	A. Explosion of a bomb B. Slow expansion of a gas C. Slow compression of a gas D. Slow compression of an eleastic spring
154	In four stroke cycle the crank makes	A. One complete revolution B. Two complete revolutions C. three complete revolutions D. Four complete reveolutions
155	The SI unit of heat capacity is.	A. kg J B. Kg J-1 C. J K-1 D. Kg J-1 K-1
156	In ideal gas equation PV = nRT , R is	A. Universal gas constant B. Avogadro's number C. Plank's constant D. Gravitational constant
157	Which gas strictly obeys gas laws.	A. Hydrogen gas B. Inert gas C. Ideal perfect gas D. Helium gas
158	Which of the following is a thermodynamic potential	A. Internal energy B. Enthalpy C. Gibb's free energy D. All of these
159	A heat engine with 100% efficiency would have to.	A. Do no work B. Be at uniform temperature C. Use no heat D. Discharge of 0 ^oC
160	One calorie equals to	A. 1.2 J B. 2.2 J C. 3.2 J D. 4.2 J
161	Which of the following is the ideal gas equation.	A. PV -n RT B. P/V = n RT C. V/P = nR/T D. PV = T/nR
162	Which temperature is the absolute measure of temperature.	A. Thermodynamic temperature B. Freezing point C. Boiling point D. Absolute zero

163	Which statement about convection is correct.	A. Brownian motion is a form of convection B. Convection occurs only in gas C. Convection results from a density change D. Evaporation is a form of convection
164	Which of the following gases has the maximum rms speed at STP.	A. O2 B. H2 C. N2 D. CO2
165	Mean free path of gas molecules is inversely proportional to its	A. Volume B. Pressure C. Temperature D. Size
166	The follow of heat from hot body to cold body is an example of	A. Adiabatic process B. Isothermal process C. Reversible process D. Irreversible process
167	On what factor the internal energy of a thermodynamic system depend upon.	A. History B. State C. Process D. Surroundings
168	The gas thermometer is taken as the primary standard because.	A. Thermometers are easily reproducible B. Readings can be accurately taken C. No correction are necessary D. It produces he thermodynamic scale
169	Thermodynamics concern its primary with the	A. Measurement of quantity of heat B. Physical effects of temperature changes C. Conversion of heat into other energy forms D. Behavior of gases
170	Change in which parameter determines the work done by a gas during adiabatic prcoess.	A. volume B. Pressure C. Temperature D. Weight
171	In the free expansion of a perfect gas there is no.	A. work done B. Heat exchnged C. Internal energy changed D. All of the above
172	Woolen clothing a effective in keeping us warm because.	A. An trapped int he wool acts as an insulator B. Heat loss by convection and radiation is prevented C. Wool is bad traciator and good absorber of heat D. Wool can retain high temperatures
173	Which of the following in the best container for gas during adiabatic process.	A. Copper vessel B. Thermos flask C. Glass container D. Wooden container
174	Most cooking involves	A. Adiabatic process B. Isothermal process C. Isobaric process D. Isochoric process
175	What happen to entropy in an irreversible cycle.	A. No gain in entropy B. No change in entropy C. Loss of entropy D. A net gain of entropy
176	The ration of Universal gas constant and Avogadro's number is called.	A. Equilibrium constant B. Velocity constant C. Boitzmann's constant D. Gravitational constant
177	A frictionless heat engine can be 100% efficient only if its exhaust temperature is	A. Equal to the input temperature B. Less than the input temperature C. 0 ^oC D. 0 K
		A. the mass of the sphere increases B. The volume of the sphere increases

178	When heat a supplied to a metallic sphere which one of the following changes will occur.	C. The density of the sphere increases D. The internal energy of the sphere increases
179	A 4 kJ mass of copper of specific heat capacity of 400 J kg-1k-1 is heated for 160 s by a heater of power 200 W what is the rise in temperature.	A. 10 K B. 16 K C. 100 K D. 160 K
180	If we place oure hand below a lighted lamp we feel warmer due to.	A. Conduction B. Convection C. Radiation D. None of these
181	How solid hydrogen is obtained.	A. By cascade process B. By joule kelvin effect C. By adiabatic expansion D. Lowering temperature below melting point
182	If volume of the gas doubled without changing its temperature the pressure of the gas is	A. Reduced to half of original value B. Not changed C. Reduced to one fourth of original value D. Doubled
183	The normal Human body temperature in Fahrenheit scale is.	A. 32 ^oF B. 40 ^oF C. 98.4^oF D. 212 ^oF
184	If the pressure in a closed vessel is reduced by drawing some gas the mean free path of the gas molecules.	A. Decreases B. Remains constant C. Increases D. First increases then decreases
185	Andrews isothermal helps to messure	A. Boiling point B. Boyle's temperature C. Temperature of inversion D. Critical temperature
186	The internal energy of an isolated system	A. Is zero B. Keeps on changing C. Remains constant D. Cannot be judged
187	During an adiabatic gas expansion the environment	A. Serves as a heat sink B. Serves as a heat source C. Must be at a higher temperature than the gas D. Does not have to participate
188	The base unit of temperature in SI is	A. Fahrenheit B. Celsius C. Kelvin D. Rnakine
189	How much Ice will melt by 50,000 J of heat.	A. 120 J B. 130 g C. 140 J D. 150 g
190	Which one of the following gases posses maximum oot mean square velocity.	A. Hydrogen B. Oxygen C. Nitrogen D. Carbon dioxide
191	A fixed mass of an ideal gas absorbs 1000 J of heat and expands under a constant pressure of 20 kPa from a volume of 25 x 10-3 m3 to a volume 50 x 10-3 The change internal energy of the gas is.	A. 500 J B. 1000 J C. -1000 J D. Zero
192	By definition a gas is said to be have undergone adiabatic compressing when	A. No heat exchange occurs between the gas and its surroundings B. The gas is compressed quickly C. The gas is compressed slowly D. The temperature of the gas remains constant
193	If the number of gas molecules in a cubical vessel is increase from N to 3 N then its pressure and total energy will be.	A. Half B. Three times C. Double D. Four times
194	In an isochoric process.	A. Volume changes B. Pressure changes C. Temperature changes

		C. Temperature changes D. Volume remains constant
195	When the temperature of source and sink of a heat engine become equal the entropy change will be.	A. Zero B. Maximum C. Minimum D. Negative
196	Why freezer a refrigerator is located in the top section	A. Motor is not affected B. Heat gained from environment is less C. The entire chamber of freezer is cooled quickly D. Heat gained from environment is more
197	Gas law PV = constant is for	A. Adiabatic change B. Isothermal changes C. Isobaric changes D. Isochoric changes
198	A metallic rod is continuously heated at its two ends, The heat following through the rod does not depend upon.	A. Mass of the upon B. Area of cross section of the rod C. Temperature gradient between two ends D. Time for which heat flow through the rod
199	A heat engine can develop efficiency equal to 100% if the temperature of the sink is	A. Less than that of source B. Equal to that of source C. 0 K D. 0 ^oC
200	The product of mass and specific heat of a substance is called.	A. Latent heat B. Water equivalent C. Atomic heat D. Heat capacity
201	What is the triple point of water.	A. 273 .15 K B. 0 K C. 100 K D. 0 oC
202	No entropy change is associated with	A. Isothermal process B. Adiabatic process C. Isochoric process D. Isoteric process
203	The thermal inertia of a thermodynamic system is known as its.	A. Entropy B. Enthalpy C. Isothermal conduction D. Adiabatic conduction
204	An inflated tyre suddenly bursts As a result of this temperature of the surrounding	A. Increases B. Descreases C. Remains constant D. May increase or decrease
205	Which of the following is standard scale of temperature	A. Mercury scale B. Platinum resistance scale C. Gas scale D. Alcohol scale
206	If temperature of the sink is decreased the efficiency of a Carnot engine	A. Increases B. Decreases C. Remains constant D. First increases and thend ecreases
207	In which temperature range water decreases in volume with increasing temperature.	A. From 0 ^oC to 4 ^oC B. from 0 ^oC to 10 ^oC C. from 50 ^oC to 100 ^oC D. from 75 ^oC to 100 ^oC
208	In Isochoric process there is no	A. Work done B. Internal energy change C. Volume change or work done D. Heat exchanged
209	The efficiency of a diesel engine is about	A. 15% to 35 5 B. 355 to 40% C. 45% to 655 D. 505 to 65 %
	Which of the following thermometers is the most suitable for measuring rapidly varying	A. Thermocouple thermometer B. Mercury in glass thermometer

210	Which of the following thermometers is the most suitable for measuring rapidly varying temperature.	B. Mercury in glass thermometer C. Alcohol in glass thermometer D. Platinum resistance thermometer
211	The specific heat of an ideal gas values as	A. To B. T1 C. T2 D. T3
212	Which is the heat transfer mode between an object and its environment due to circular fluid motion.	A. Conduction B. Convection C. Radiation D. Mass transfer
213	Which thermometer is called sprint thermometer	A. Alcohol thermometer B. Mercury in glass thermometer C. Gas thermometer D. Radiation thermometer
214	If T1 and T2 are source and sink temperature respectively Carnot efficiency is.	A. T1+T2/T1 B. T1-T2/T1 C. T1+T2/T2 D. T1-T2/T2
215	At absolute zero of temperature.	A. The molecular energy is zero B. Molecules have translational K.E C. Molecules have rotational K.E. D. Molecules have maximum energy
216	What is the necessary condition for Boyle's law to hold good.	A. Isothermal B. Adiabatic C. Isobaric D. Isochoric
217	Diffusion of gases occurs because the molecules of the	A. Gas present in a higher concentration exerts a high pressure B. Gases are different C. Gasses attract each other D. Gasses over about randomly
218	The specific heat capacity of the body depends upon.	A. the heat given to it B. Mass of the body C. Temperature raised D. Material of the body
219	What should be the shape of an ideal thermometer.	A. Sphereical B. Cubical C. Cylindrical D. Rectangular
220	Which of the following phenomenon gives evidence of the molecular structure of mater	A. Evaporation B. Diffusion C. Brownian movement D. All of the above
221	A given mass of air occupies 12 m2 at normal atmospheric pressure if the pressure is increased to 4 times the original value without changing the temperature what volume will the air occupy.	A. 3 cm3 B. 6 cm3 C. 9 cm3 D. 12 cm3
222	Pressure of a gas depends upon	A. Only on the molecular speed B. Only on the speed of molecules on a unit volume C. Only on the mass of molecules D. Number of molecules mass and speed in a unit volume
223	The zero point of Kelvin scale is called.	A. Critical point B. Terminal point C. Absolute zero D. Mid point
224	In general work done on or by a gas depends on.	A. The initial state only B. The final state only C. The initial and final states D. The initial state the final state and the path
225	The change in entropy for any reversible cycle is identically	A. Infinite B. Positive C. Negative D. Zero
226	A mercury thermometer has	A. Low conductivity and low thermal capacity B. High conductivity and high thermal capacity C. Low conductivity and high thermal capacity D. High conductivity and high thermal

		D. High conductivity and high thermal capacity
227	A Carnot engine can be 100% efficient of the sink is at.	A. 0 k B. 0 oF C. 0 oC D. 273 K
228	Which law states that a change in the internal energy of a closed thermodynamic system is equal to the difference between the heat supplied to the system and teh amount of work by the system on the surrounding.	A. Zeroth law of thermodynamics B. First law of thermodynamics C. Second law of thermodynamics D. Third law of thermodynamics
229	What is a thermal properly of a material that determines the quantity of energy required to change the phase of a unit mass of that substance.	A. Specific heat B. Latent heat C. Internal energy D. Specific energy
230	Which of the following is a thermodynamic temperature scale.	A. Celsius scale B. Fahrenheit scale C. Kelvin scale D. Rankine scale
231	What happens to Carnot efficiency if the source temperature increases.	A. Decreases B. Increases C. Remain the same D. Becomes zero
232	What is the SI unit for thermal conductivity.	A. W m-1 K-1 B. W m-2 k-2 C. W m-3 k-1 D. J kg -1 k-1
233	On which of the following the kinetic theory of gases is not applicable.	A. Water vapour B. Smoke particles C. Bound particles D. Free electrons
234	When the temperature of a body is equal to that of the surrounding then the body appears	A. Dull black B. Red hot C. In thermal equilibrium D. To be cold
235	The process is which volume of the system remains constant.	A. Isobaric process B. Isochoric process C. Isothermal process D. Adiatatic process
236	A gas thermometer is more sensitive than a mercury thermometer because the expansion of gas for 1 o/c rise in temperature is.	A. Five times as much as mercury B. Ten times as much as mercury C. Twenty times as much as mercury D. Hundred times as much as mercury
237	The specific heat of liquid	A. Decreases with temperature B. Increases with temperature C. Remains constant with change in temperature D. Increases with pressure
238	What happens to internal energy of a piece of lead when hammered.	A. Increases B. Decreases C. Remains unchanged D. Becomes zero
239	To which law of thermodynamics, the concept of temperature is related to.	A. Zeroth law B. First law C. Second law D. Third law
240	Which of the following is the science of measuring the heat of chemical reactions or physical changes.	A. Thermometry B. Calorimetry C. Telemetry D. Photometry
241	Which of the following measures how quickly the thermometer liquid mainly because it	A. Is coloriess B. Is a bad conductor of heat C. Does not expand linearly D. Has a low boiling point
242	For which process is the relation Delta Q = Delta V true.	A. Isothermal B. Adiabatic C. isobaric D. Isochoric
243	In the gas equation PV =nRT , V is the volume of.	A. 1 g of gas B. 1 L of gas C. 1 mol of gas D. 1 kg of gas

244	What is the minimum number of thermodynamic parameters required to specify the state of gas system.	A. 1 B. 2 C. 3 D. Infinite
245	What is the heat required in Kilo joules when the temperature of 100 g of copper is raised thgough 20 K/. Specific heat capacity of copper is 0.4 x 10-3 kg -1 k-1	A. 0.4 kj B. 0.8 kj C. 400 kj D. 800 kj
246	The practical efficiency of a heat engine is	A. 25% to 30.5 % B. 35% to 45% C. 30% to 45% D. 15% to 25%
247	The specific heat capacity of a substance is the amount of heat required to.	A. Raise its temperature by 1 K B. Raise the temperature of 1 kg of the substance by 1 K C. Melt 1 kg of the substance D. Boil 1 kg of the substance
248	Which following properties of molecules of a gas is same for all gases at a particular temperature.	A. Momentum B. Mass C. velocity D. K.E.
249	From any substance the temperature and pressure at which the material can coexist in all three states in equilibrium is called.	A. Critical point B. Triple point C. Initial point D. Final point
250	Which of the given geometries will result in the largest convection consfficient.	A. Vertical plate B. Diagonal plate C. horizontal plate facing upwards D. Horizontal plate facing downwards
251	What makes the air coming out of a punctured tyre cool.	A. Isothermal expansion B. Adiabatic expension C. Flow at high speed D. Atmospheric pressure
252	The behavior of the gases that can be easily liquefied is like that of the.	A. Triatomic gases B. Ideal gases C. Van der walls gases D. Dia atomic gases
253	What is world's average surface air temperature.	A. 5 ^oC B. 10^oC C. 15 ^oC D. 20 ^oC
254	The kinetic molecular model of matter describe matter an being made up of molecules in continuous.	A. Vibratory motion B. Random motion C. rotatory motion D. Linear motion
255	The volume of a goas at constant pressure is directly proportional to the temperature as measured on the.	A. Celsius scale B. Kelvin scale C. Fahrenheit scale D. Baume scale
256	In a vacuum flask the vacuum prevents heat transfer by	A. Radiation only B. Conduction only C. Convection only D. Conduction and convection