

TEST - 8
CH – 8+9

PHYSICS

Time Allowed: 15 Minutes

CLASS 9TH – 019

Paper: (Objective Type)

Maximum Marks: 12

Note : You have four choices for each objective type question as A , B, C and D. The choice which you think is Correct, fill that circles in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

Q.1	QUESTIONS	(A)	(B)	(C)	(D)
1.	There are ways to transfer the heat from one place to another	1	2	3	4
2.	Which material has large specific heat?	Copper	Ice	Water	Mercury
3.	The example of bad conductor is.	Wool	Copper	Gold	Iron
4.	Normal human body temperature is.	15 °C	37 °C	37 °F	98.6 °C
5.	Rooms are heated using gas heaters by.	Conduction only	Convection and radiation	Radiation only	Convection only
6.	Specific heat of water in $\text{Jkg}^{-1} \text{K}^{-1}$ is.	4200	4000	1000	2500
7.	In gases heat is mainly transferred by.	Molecular collision	Conduction	Convection	radiation
8.	The process in which heat is transfer due to actual movement of molecule is called.	Conduction	Radiation	Convection	All of these
9.	Water freezes at.	0 °F	32 °F	-273 K	0 K
10.	Which of the following affects evaporation?	Temperature	Surface area of the liquid	Wind	All of the above
11.	Which gas is used inspite of Freon gas in refrigerator?	CO_2	H_2	NH_3	N_2
12.	What happens to the thermal conductivity of a wall is its thickness is doubled.	Become double	Remains the same	Becomes half	Becomes one fourth

A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
1	(A)	(B)	(C)	4	(A)	(B)	(C)	7	(A)	(B)	(C)	10	(A)	(B)	(C)	13	(A)	(B)	(C)
2	(A)	(B)	(C)	5	(A)	(B)	(C)	8	(A)	(B)	(C)	11	(A)	(B)	(C)	14	(A)	(B)	(C)
3	(A)	(B)	(C)	6	(A)	(B)	(C)	9	(A)	(B)	(C)	12	(A)	(B)	(C)	15	(A)	(B)	(C)

نوٹ: معروضی سوال نامے کو توجہ سے پڑھیں اور ہر MCQ کی درست آپشن A, B, C, D کو چین کی سیابی یا مارکر سے اس طرح پُر کریں کہ سیابی دائرے سے باہر نہ نکلے۔ ایک سے زیادہ دائروں کو پُر کرنے یا کاٹ کر پُر کرنے کی صورت میں مذکورہ جواب غلط تصور ہوگا۔

TEST NO – 8

CH – 8 + 9

PHYSICS

Time Allowed: 1:45 hours

CLASS 9TH – 019

Paper : (Essay Type)

Maximum Marks: 48

(PART – I)

2. Write short answers to any Five (5) questions:

10

- (i) Write the use and range of clinical thermometer.
- (ii) Write methods of heat transfer.
- (iii) What is a thermometer? Why mercury is preferred as a thermometric substance?
- (iv) Why bottoms of cooking pots are made black?
- (v) Write the scales of temperature.
- (vi) What causes a glider to remain in air?
- (vii) What will be Heat capacity of 5 kg water?
- (viii) What is meant by conduction?

3. Write short answers to any Five (5) questions:

10

- (i) Define Latent Heat of fusion.
- (ii) What is the effect of length of the solid on thermal conductivity?
- (iii) Define coefficient of linear thermal expansion and water is its SI unit?
- (iv) What is the thermos flask?
- (v) What is meant by anomalous expansion of water?
- (vi) Define Convection.
- (vii) Define temperature.
- (viii) On what factors radiations depends?

4. Write short answers to any Five (5) questions:

10

- (i) How can Celsius scale be converted into Kelvin and Fahrenheit scales?
- (ii) What is greenhouse effect?
- (iii) Temperature of water in a beaker is 50 °C. What is its value in Fahrenheit scale?
- (iv) Difference between Conductor and non-conductor.
- (v) What is the effect of surface area on the evaporation.
- (vi) Define thermal conductivity and write its equation.
- (vii) Why gaps are left in railway tracks?
- (viii) We wear white and light coloured clothes in summer why?

(PART – II)

Note:- Attempt any TWO questions.

- 5. (a) What is greenhouse effect. Explain the impact of greenhouse effect in to Celsius scale and Kelvin scale. **4**
- (b) How much heat is required to increase the temperature of 0.5 kg of water from 10 °C to 65 °C **5**
- 6. (a) Explain Land and Sea breeze are example of convection. **4**
- (b) How much heat is required to change 100 g of water °C into steam latent heat of vaporization of water is $2.26 \times 10^6 \text{ J kg}^{-1}$ **5**
- 7. (a) What causes a glider to remain air. **4**
- (b) Normal temperature of human body is 98.6 F. Convert it in the Celsius scale and kelvin scale. **5**

Chemistry (Part - I)

2. Write short answer to any five question:

(i)

write the use and range of chemical thermometer?

A clinical thermometer is used to measure the temperature of human body.

(ii)

write methods of heat transfer?

Heat can be transmitted from one object to the other by the following three processes, if these objects are at different temperature

(1) Conduction

(2) Convection

(3) Radiation

(iii)

what is thermometer? why mercury is preferred as a thermometric substance?

The instrument which is used to measure the temperature is called a thermometer.

- ① It has high boiling point
- ② It has low melting point
- ③ It does not wet glass
- ④ Good Conductor
- ⑤ Opaque

(iv)

why bottoms of cooking pots are made black?

The bottoms of cooking pots are made black to increase the absorption of heat from fire.

(v)

write the scales of temperature?

Mercury-in-glass thermometers are widely used in laboratories, clinics and houses to measure temperature in the range from -10°C to 150°C .

(vi)

what causes a glider to remain in air?

Glider use upward movement of hot air currents due to convection of heat.

(vii)

what will be Heat capacity of 5kg water?

Heat capacity of 5kg of water is $(5\text{kg} \times 4200 \text{ J kg}^{-1} \text{ K}^{-1})$ 21000 J K^{-1} . That is 5kg of water needs 21000 joules of heat for every 1K rise ^{in its} temperature.

(viii)

what is meant by conduction?

The mode of transfer of heat by vibrating atoms and free electrons in solids from a hot to cold parts of a body is called conduction of heat.

3. write short answers to any five (5) question:

(i)

Define Latent Heat of fusion?

Heat energy required to change unit mass of a substance from solid to liquid state at its melting point without change in the temperature is called Latent heat of fusion.

(ii) ,
 what is the effect of length of the solid on thermal conductivity?

Larger r is the length between the hot and cold ends of the solid.

(iii) ,
 Define coefficient of linear thermal expansion and what is its SI unit?

If a rod of one meter length is heated through a temperature difference of $1K$ then the change in the length of rod is called linear thermal expansion which has unit K^{-1} .

(iv)
 what is the Thermos Flask?

A thermos flask consists of a double-walled glass vessel.

(v)
 what is meant by anomalous expansion of water?

Water on cooling below $4^{\circ}C$ begins to expand until it reaches $0^{\circ}C$. On further cooling its volume increases.

Define Convection?

Transfer of heat by actual movement of molecules from hot place to a cold place is known as Convection.

(vii)

Define temperature?

Temperature of a body is the degree of hotness or coldness of the body.

(viii)

On what factors radiations depends?

upon various factors such as

- ① colour and texture of the surface
- ② Surface temperature
- ③ Surface area



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4. write short answers to any (5) five questions:

(i)

How can celsius scale be converted into kelvin and Fahrenheit scales?

The temperature T on kelvin scale can be obtained by adding 273 in the temperature C on Celsius scale.

(ii)

what is greenhouse effect?

Glass and transparent polythene sheets allows radiations of short wavelength to pass through easily but no long wavelength of thermal radiations.

(iii)

Temperature of water in a breaker in 50°C . what is its value in Fahrenheit Scale?

$$T_c = 50^{\circ}\text{C}$$

$$T_f = ?$$

$$F = \frac{9}{5}C + 32$$

$$\frac{9}{5} \times 50 + 32$$

$$F = 90 + 32 = 122^{\circ}\text{F}$$

(iv)

Difference between conductor and non-conductor?

Conductors can pass the heat and electricity but non conductors are not capable of doing this.

(v)

what is the effect of surface area on the evaporation?

The surface area affects evaporation because if more area is exposed to ^{allowing} air & water molecules acquire ^{more heat energy} from the

(vi)

surroundings

Define thermal conductivity and write its equation?

The rate of flow of heat across the opposite faces of a meter cube of a substance maintained at a temperature difference of one kelvin is called the thermal conductivity.

(vii)

why gaps are left in railway tracks?

Gaps are left in railway tracks to compensate thermal expansion during hot season.

(viii)

We wear white and light coloured clothes in summer why?

During summer most of people prefer to wear white dress because white reflects lights. So its order to keep your body temperature normal it's better to wear white dress.

(iii)

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$$F = 90 + 32 = 122^{\circ}F$$

(Part - II)

Q405(a)

Light from the Sun contains thermal radiations of long wavelength as well as light and ultraviolet radiations of short wavelength.

Glass and transparent polythene sheets allow radiations of short wavelength to pass through easily but not long wavelength of thermal radiations. A greenhouse becomes a heat trap. Radiations from the Sun pass easily through glass and warm up the objects in a greenhouse. These objects and plants such as, give out radiations of much longer wavelength. Glass and transparent polythene sheets do not allow them to escape out easily and are reflected back in the greenhouse. Greenhouse effect promises better growth of some plants.

Qno 5 (b)

$$m = 0.5 \text{ kg}$$

$$T_1 = 10^\circ \text{C}$$

$$T_2 = 65^\circ \text{C}$$

$$\Delta T = T_2 - T_1$$

$$= (65 - 10)^\circ \text{C}$$

$$= 55^\circ \text{C}$$

$$= 55 \text{ K}$$

Required:

$$Q = ?$$

Solution:

$$\Delta Q = mc\Delta T$$

$$\Delta Q = 0.5 \times 4000 \times 55$$

$$\Delta Q = 115500 \text{ J}$$

Qno 6 (a)

Land and Sea Breezes:

Land and Sea breezes are the result of convection.

Sea Breeze:

On a hot day the temperature of the land increases more quickly than the sea. This is because the specific heat of land is much smaller as compared to water. The air above land gets hot and rises up.

Land Breeze.

At night the land cools faster than the sea, therefore air above the sea is warmer, rises up and the cold air from the land begins to move towards the sea.

Ques 6(b)

$$m = 100\text{g} = 0.1\text{kg}$$

$$T_1 = 100^\circ\text{C}$$

$$T_2 = 100^\circ\text{C}$$

$$H_v = 2.26 \times 10^6 \text{ J kg}^{-1}$$

$$Q_v = ?$$

Solution:

$$Q_v = m \times H_v$$

$$Q_v = 0.1 \times 2.26 \times 10^6 \text{ J}$$

$$Q_v = 2.26 \times 10^5 \text{ J}$$

Result

$$\text{Heat required} = Q_v = 2.26 \times 10^5 \text{ J}$$

Ques 7 (a)

A glider such as a small aeroplane without engine. Glider pilots use of heat. These rising currents of hot air are called Thermals. Gliders ride over these Thermals. The upward movement of air currents in Thermals.

helps them to stay in air for a long period.

The birds stretch out their wings and circle in these thermals. The upward movement of air helps birds to climb up with it. Eagles, hawks and vultures are expert thermal climbers.

Q407 (b)

$$T_f = 98.6^\circ\text{F}$$

$$T_k = ?$$

$$C = \frac{5}{9} (F - 32)$$

$$C = \frac{5}{9} (98.6 - 32)$$

$$C = \frac{5}{9} (66.6)$$

$$C = 37^\circ\text{C}$$

$$T_k = C + 273$$

$$T_k = 37 + 273 = 310\text{K}$$

$$T_k = 310\text{K}$$