Adabistan-e-Soophia

Code: 2071

Test No.: 2 **Paper:** Physics

Name:_____ **Class:** X **Sec:** _____

Syllabus: **Ch. 12, 13**

Question Numbers	1	2	3			Total	Grade	%age
Maximum Marks	09	22	09			40		
Marks Obtained								
Remarks:_____								

Time Allowed: 15 mins **(Objective Type)** **Max. Marks: 09**

	A	B	C	D	Write Correct option
1	A	B	C	D	
2	A	B	C	D	
3	A	B	C	D	
4	A	B	C	D	
5	A	B	C	D	
6	A	B	C	D	
7	A	B	C	D	
8	A	B	C	D	
9	A	B	C	D	
10	A	B	C	D	
11	A	B	C	D	
12	A	B	C	D	
13	A	B	C	D	
14	A	B	C	D	
15	A	B	C	D	
16	A	B	C	D	
17	A	B	C	D	
18	A	B	C	D	

Note: Four possible answers A, B, C and D to each question are given. The choice which you think is correct, fill that circle in front of that question with Marker or Pen ink. Cutting or filling two or more times result in zero mark in that question.

Q.1	Questions	(A)	(B)	(C)	(D)
1.	The index of refraction depends on:	Focal length	Speed of light	Image distance	Object distance
2.	Which type of image is formed by convex lens?	Inverted and real	Inverted and virtual	Upright real	Upright virtual
3.	Refractive index of water is:	1.52	1.33	1.00	2.42

4.	Speed of light in water is:	$2.3 \times 10^{9} ms^{-1}$	$2.3 \times 10^{8} ms^{-1}$	$3 \times 10^{8} ms^{-1}$	$2 \times 10^{8} ms^{-1}$
5.	Focal length is negative for:	Converging lens	Diverging lens	Can never be negative	None
6.	Pole is the:	Midpoint of curved surface	Centre of sphere	Line joining the centre	Distance from centre
7.	In convex mirror, focus is:	On the mirror	Front of mirror	Behind the mirror	Centre the mirror
8.	Focal length of spherical mirror is equal to:	$\frac{R}{2}$	$\frac{R}{4}$	$4R$	$2R$
9.	Lens formula is:	$\frac{1}{f} = \frac{1}{p} - \frac{1}{q}$	$\frac{1}{p} = \frac{1}{f} + \frac{1}{q}$	$\frac{1}{f} = \frac{1}{p} + \frac{1}{q}$	$\frac{1}{f} = p + q$
10.	Value of k in coulombs law is:	9×10^{9} $Nm^{2}C^{-2}$	9×10^{9} $Nm^{-2}C^{2}$	9×10^{9} $m^{2}C$	9×10^{-9} $Nm^{2}C^{-2}$
11.	Formula of electric intensity:	$E = \frac{v}{q}$	$K = Eq$	$E = \frac{f}{q}$	$E = \frac{w}{v}$
12.	Capacitance is defined as:	VC	$\frac{Q}{V}$	QV	$\frac{V}{Q}$
13.	Coulomb law is valid for charges which are:	Moving & point charge	Moving & non-point charge	Stationary & point charge	Stationary & large
14.	Electric field lines:	Always cross each other	Never cross each other	Cross each other in strong field	None
15.	$Q \propto$	C	E	V	F
16.	Value of K depends on:	Capacity of charges	Electric field	Medium between charges	Electric force
17.	Unit of electric intensity is:	NC	$N^{-1}C$	NC^{-1}	None
18.	Energy supplied by charge is:	qv	$q(v_a + v_b)$	$q(v_a - v_b)$	qE

Time Allowed: 75 minutes **(Subjective Type)** **Max. Marks: 31**

(Section - I)

2. Write short answers to the following questions. (11×2=22)

i. What are laws of refraction?

ii. Define power of lens.

iii. What is total internal reflection?

iv. A convex mirror is used to reflect light from object placed 66 cm in front of mirror. Focal length of mirror is 46 cm. Find location of image.

v. How speed of light effects the refractive index?

vi. State coulomb's law.

vii. Define electric field intensity. Also write its unit.

viii. Define unit of capacitance.

ix. Enlist any two uses of capacitors.

x. Two bodies are oppositely charged with $500\ \mu C$ and $100\ \mu C$ charge. Find the force between them if distance is $0.5\ m$.

xi. Define electrostatic induction.

(Section - II)

Note: Give detailed answers of the following questions. (4+5=09)

3. a) Derive the formula for the equivalent capacitance for a series combination of a number of capacitors. **(4)**

b) A convex lens of focal length 6 cm is to be used to form a virtual image three times the size of object. Where must the lens be placed? **(5)**