

GIRLS CADET COLLEGE MARDAN
ENTRY TEST FIRST YEAR MODEL PAPER- PHYSICS

Total Marks:50

Time allowed : 1 hour

SECTION A

QUESTION#1

Marks:20

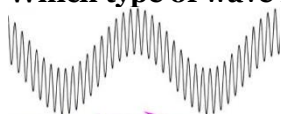
Choose the correct option i.e. A, B, C and D.

- i. A car mounted on shock absorbers is like a mass on a spring. If we ignore damping, how will the frequency of the oscillations change if passengers (or a heavy load) are added to the car? The frequency will _____.

	A	Increase	B	Decrease	C	Same	D	zero
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Which type of wave is generated by spring?

- ii.



	A	Transverse	B	longitudinal	C	Electromagnetic	D	matter
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- iii. You have 100 grams of radioactive C-14. The half life of C-14 is 5730 years. How many grams are left in 1 half life??

	A	2 grams	B	25 grams	C	50 grams	D	100 grams
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- iv. The human eye forms the image of an object at its _____.

	A	Iris	B	Retina	C	Pupil	D	cornea
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- v. what is the symbol for light bulb ?

	A		B		C		D	
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- vi. If the angle of incidence is 30 deg the angle of reflection will be _____.

	A	30	B	45	C	90	D	210
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- vii. After two half lives, the number of decayed nuclei of an element are:

	A	$\frac{3N}{4}$	B	$\frac{N}{4}$	C	$\frac{N}{2}$	D	N
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- viii. the angle of incidence is 30 deg the angle of reflection will be:

	A	farad	B	Coulomb	C	Volt	D	electron volt
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- ix. Which quantity does not change during refraction?

	A	Direction	B	Speed	C	Wavelength	D	Frequency
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- x. Four identical 1 μ F capacitors are connected together electrically. What is the least possible capacitance of the combination?

	A	4 μ F	B	1 μ F	C	1/4 μ F	D	1/8 μ F
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- xi. 1 kWh =

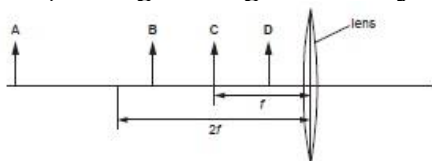
	A	1000J	B	3.6 x 10 ⁹ J	C	0.36 hrs	D	3600 W
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- xii. When connected to a battery, a lightbulb glows brightly. If the battery is reversed and reconnected to the bulb, the bulb will glow _____.

	A	Brighter	B	Dimmer	C	with the same brightness	D	and fuse
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An object is placed in front of a converging lens. The lens has a focal length f. The lens produces a real, enlarged image of the object. In which labeled position is the object placed?

- xiii.



	A		B		C		D	
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xiv.	What happens to light during total internal reflection?							
	A	The angle of incidence is greater than the critical angle.	B	The angle of reflection is the same as the critical angle.	C	The angle of refraction is less than the critical angle.	D	the angle of incidence is zero
xv.	_____ cables transmit beams of light without allowing any of the light to escape until it gets to the end of the cable.							
	A	Ethernet	B	Fiber optic	C	Armored	D	Coaxial
xvi.	If the distance between two charged particles is halved, the Coulomb force between the two charged particles becomes_____.							
	A	Half	B	. one quarter	C	Double	D	four times
xvii.	Half life of Radium is 1590 years. In how many years shall the earth loss all his radium due to radioactive decay?							
	A	1590×10^6 years	B	1590×10^{12} years	C	1590×10^{25} years	D	Never
xviii.	Which one of the following materials will refract light more_____.							
	A	Water	B	Glass	C	Air	D	diamond
xix.	What is frequency of oscillation if time period is 20ms?							
	A	50 Hz	B	20 Hz	C	0.5 Hz	D	500 Hz
xx.	A certain pendulum has an iron bob. When the iron bob is replaced with lead bob of the same size, its time period will_____.							
	A	Increase	B	Decrease	C	Same	D	zero

QUESTION#2

Marks:05

Fill in the blanks:

- I. Mass number of alpha particle is _____
- II. The bending of waves around the edges of the obstacle is _____.
- III. Who benefits more from using a magnifying glass, a person whose near point is located at a distance away from the eyes of _____.
- IV. When combing our hair, we shift electrons from our hair onto the comb. The charge on our hairs is _____.
- V. The device that is used to protect a circuit against overload is _____.

QUESTION#3

(Marks: 05)

Give the formula for each:

1)	Series combination of capacitor	
2)	Mutual Inductance	
3)	Transformer turn ratio	
4)	Critical angle	
5)	Angular magnification equation for image at infinity (compound microscope)	

QUESTION # 4

(marks: 05)

What is the proton proton cycle of nuclear fusion?

QUESTION # 5

(marks: 05)

What is Fleming left hand rule with diagram?

QUESTION # 6

(marks: 05)

A telescope has magnification of 40.0cm and a length of 1230 mm . what are the focal length of the objective and eye piece.?

QUESTION # 7

(marks: 05)

Suppose you found a frozen dead animal remains in the Himalays. You took a sample from it and found that carbon 14 (half life $T_{1/2}=5730$ years) activity is reduced $1/8$ per gram from original value. How old are the dead animal remains?
