INDIAN SCHOOL AL MAABELA

(ISO 9001:2015 CERTIFIED INSTITUTION)

QUESTION BANK 2019-2020

PHYSICS -GRADE 10

ISAM/SEC/QB /042

Directions (Q1-Q8) Select the most appropriate option from those given below each question

1	Image formed by plane mirror is a)Real and erect b) Real and inverted c) Virtual and erect d)Virtual and inverted	1
2	A concave mirror gives real, inverted and same size image if the object is placed a) At F b) At infinity c) At C d) Beyond C	1
3	Power of the lens is -40, its focal length is a) 4 m b)-40m c)-0.25m d. -25m	1
4	Which type of reflection is represented by the light reflected from a book? a) Regular b) Irregular c) Both types d)None	1
5	For a plane mirror, the magnification is always. a) Greater than one b) less than one c) equal to one d) zero	1
6.	If the absolute refractive indices of water, glass and diamond are 1.33, 1.50 and 2.42, respectively, then which medium is optically densest? a) glass b) diamond c) water d) all are correct	1
7.	What will be the angle of refraction for a light ray incident normal to the surface? a) 90 b) 60 c)30 d)0	1
8.	If the distance between A and his image formed by a plane mirror is 3 m, then the distance between Paresh and the mirror is... a) 1.5 m b) 3 m c) 6 m d) 1/3 m	1

Write the answer for the following questions

9.	Write the differences between real and virtual image	1
10	Define the principal focus of a concave mirror	1
11	Why are convex mirrors preferred over plane mirrors as rear view mirrors?	1
12	?What is the range of vision for normal human eye?	
13	What is the principle of working of human eye?	1
14	Define power of accommodation	1
15	Write down some effects of atmospheric refraction	1
16	What is the distance of distinct vision?	1

17	Write down 2 uses of convex and concave mirrors	1
18	What is Tyndall effect?	
19	The radius of curvature of concave mirror is 50cm. Where an object should be placed from the mirror so as to form its image at infinity? Justify your answer	2
20	How is normal eye able to see distinctly distant as well as nearby objects?	2
21	An old man is not able to see clearly nearby objects and distant objects. What defect of vision is he suffering from?	2
22	Explain giving reason why the sky appears blue to an observer from the surface of the Earth.	2
23	Write down the laws of reflection. Draw a diagram to show the reflection by plane mirror	2
24	A concave mirror produces three times enlarged image of an object placed at 10cm in front of it. Calculate the focal length of the mirror. Show the image formation with the help of a ray diagram when the object is placed 6 cm away from the pole of a convex mirror	
25	Name the type of mirrors used in the following situations. Support your answer with reasons. a) Headlight of a car b) Rear-view mirror of a car c) Solar furnace .	3
26	Explain the terms related to spherical lenses. Optical center b) aperture c) principal focus d) center of curvature	3
27	At what distance from a concave lens of focal length 20cm ,a 6cm tall object be placed so as to obtain its image at 15cm from the lens? Also calculate the size of the image formed	3
30	Stars seem higher than actually they are. Length of the day is longer than actually it is .Justify these statement with reason	3
31	Why concave lens is used to correct myopia or shortsightedness? What is cataract? How it can be corrected?	3

32. Write down the function of each of the following parts of human eye 3

a) cornea b) iris c) crystalline lens

33 What is refraction? State laws of refraction 5

Draw a neat and labelled diagram to show the refraction of light through glass slab

34. What is dispersion? Name the colors in visible spectrum 5

b) Draw a neat labelled diagram and show dispersion of white light through prism

35 What type of spectacles should be worn by a person to correct? Explain with the help of a labelled diagram. If the far point of vision is 150cm, find out the power of the lens used to wear to correct it 5

Chapter 10- Electricity , Chapter 13 –Magnetic effect of electric current ,

chapter 14- Sources of energy

Directions (Q1-Q8) Select the most appropriate option from those given below each question

1. In SI unit J/C is equivalent to

a) Volt b) Ampere c) Omega d)Pascal

2. Wire maintained at zero potential by connecting it to Earth at power station itself is called

a) live wire b) neutral wire c) earth wire d) delta wire

3. Resistance is inversely proportional to

a) Area b) length c) resistivity d) type of material

4. Which of the following device must be connected in parallel

a) Voltmeter b) Ammeter c) cell d) resistance wire

5. Which of the following is not ultimately derived from solar energy?

a) geothermal b) wind c) bio-gas d) fossil fuels

6. The working of nuclear power reactor is based on the principle of

a) conversion of mechanical energy in to electric energy b) release of energy in nuclear fission

c) release of energy in nuclear fusion d) conversion of PE in to electric energy

7. More heat energy can be produced in a solar cooker by using

a) concave mirror b) plane mirror c) convex mirror d) glass plate

8. In an electric motor, the direction of current in the coil changes once in each

a) two rotations b) one rotation c) half rotation d) one-fourth rotation

9. In Fleming's left hand rule, thumb shows direction of
   a)Current b) field c) motion d) charge

10. Current carrying conductor placed in a magnetic field experiences a force. The device based on this principle is
   a) electric motor b) electric generator c) electric bell d) transformer

write the answer for the following questions

1 mark questions

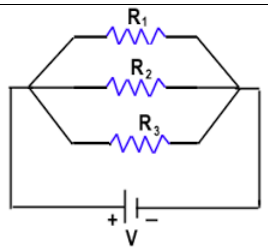
1. Define electric current. Name the particle the constitutes electric current
2. Mention the condition under which charges move in a conductor
3. State the factors on which the heat produced in a current carrying coil depends
4. List two sources of magnetic field
5. Define the term electromagnetic induction
6. State Right hand thump rule
7. What is meant by solenoid?
8. Write the sequence of events taking place in a bio gas plant
9. Name the two major components present in the left over slurry of a bio gas plant
10. Write two disadvantages of energy from ocean

2 marks questions

1. Explain the disadvantages of series arrangement for household circuit
2. Give reasons
3. a) electric bulb is filled with chemically inactive gases like nitrogen and argob) fuse wire is placed in series with the device
4. explain the working principle of electric motor
5. Explain Fleming's Left Hand Rule with the help of diagram
6. What is solenoid? Draw the magnetic field lines around solenoid
7. Give the significance of the earthing in a domestic circuit
8. Can two magnetic field lines intersect each other? Give reasons
9. State three characteristics of good source of energy
10. Why charcoal is considered to be better fuel than wood?

3marks questions

1. State Ohm's law. Draw a circuit diagram to verify this law
2. Show four different ways in which three resistors of 'R 'ohm may be connected in a circuit
3. Three resistors 10Ω , 5Ω and 20Ω are connected in series in a circuit. If the potential drop across the 15 resistor is 3V , find the current in the circuit
4. Calculate the resistance of 1km long copper wire of area of cross section 2×10^{-2} cm^2. The resistivity copper is 1.623×10^{-8} ohm meter
5. If $R_{1=}$ $R_{2=}$ $R_3 = 10\Omega$ and V= 30 V, find the power consumed by each resistor



6. Draw a diagram to show the magnetic field lines around a bar magnet. List any two properties of magnetic- filed lines
7. Draw a schematic labelled diagram of domestic electric circuit.
   Why is it necessary to provide a fuse in an electric circuit?
8. A coil of insulated copper wire is connected to a galvanometer. What would happen if a bar magnet is a) pushed in to the coil b) withdrawn from the coil c) held stationary inside the coil
9. Explain the principle and working of biogas plant.
10. Name the process by which nuclear energy is generated and give two advantages and hazards of nuclear energy

5 marks questions

1. What is meant by electric current and potential difference?
   Name and define SI units. Name the devices used to measure current and potential difference
2. Derive an expression for the equivalent resistance of three resistors connected
   a) in series b)in parallel across a voltage source.
3. Define electric power and derive 3 equations of electric power
4. Explain an activity to show that current carrying coil placed in a magnet experiences a force.

   State and explain the rule used to find out the direction of force
5. State and explain the working of generator