

CH # 01 INTRODUCTION TO PHYSICS  
PAST TEN YEARS QUESTIONS

THEORETICAL QUESTIONS:

2005

Q: Define physics and name any two of its branches?

2006

Q: Write down any three contribution of Muhammad bin Musa Khwarizmi?

2007

Q: Write 2 contributions of each of the following: a) AL-BERUNI b) IBN-AL-HATHAIM

2008

Q: Write the contribution of each the following in the field of physics

a) AL-BERUNI b) YAQOOB KINDI

2009

Q: Write 2 contribution of each of the following

a) AL-BERUNI b) IBN-AL-HATHAIM

2010

Q: Define any 3 branches of physics?

2011

Q: Define physics and write down only the names of 4 branches?

2012

Q: Write three contribution of Al-Beruni the field of science?

2013

Q: Define Physics and write the name of any four branches of physics?

2016

Q: Write down three uses of laser technology.

2017

Q: Define Physics and write the name of it's four branches?

MULTIPLE CHOICE QUESTIONS (MCQS):

1. The name of the famous AL-BERUNI is AL-QANOON-AL-MASUDI. (2005, 09)
2. The laws of refraction first introduced by IBN-UL-HAITHAM. (2010)
3. Kitab-al-Manazir is written by IBN-UL-HAITHAM. (2011, 13)
4. The branch of physics concerned with highly ionized atom is called PLASMA physics. (2014)
5. Kitab-UI-Manazir was written by IBN-UL-HAITHAM. (2017)

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CH # 02 MEASUREMENT  
THEORETICAL QUESTIONS

2005

Q: Write 3 fundamental and 3 derived units with their symbols?

2006

Q: Define random error?

2007

Q: Write the S.I unit of the following:

- i) Pressure                  ii) Stress                  iii) Work  
iv) Momentum              v) Volume                  vi) Latent Heat

2008, 2009, 2010 & 2011 (No Question in These Years)

2013

Q: Write the S.I unit of the following physical quantities:

- I) Length      II) Electric current      III) Pressure      IV) Work      V) Volume      VI) Force

2014

Q: Write the S.I.U for the following:

- I) Viscosity      II) Stress      III) Torque      IV) Temperature      V) Momentum      VI) Input.

2017

Q: Write down the S.I units of the following physical quantities:

- I) Torque      II) Weight      III) Power      IV) Stress      V) Length      VI) Frequency

MULTIPLE CHOICE QUESTIONS (MCQS).

1. Zero error is a kind of SYSTEMATIC ERROR. (2007)
2. One milliampere is equal to  $10^{-3}$  Ampere. (2008)
3. In SI system the unit of mass is KILOGRAM. (2010)
4. Unit of light intensity is CANDELA. (2011)
5. One micro meter is equal to  $10^{-6}$  METER. (2011)
6. One Nano meter is equal to  $10^{-9}$  METER. (2012)
7. One Pico sec is equal to  $10^{-12}$  SEC. (2013)
8. One mega meter is equal to  $10^6$  METER. (2014)
9. 1 micro gram =  $10^{-6}$  KG. (2016)
10. One micro meter is equal to  $10^{-6}$  METER. (2017)

CH # 03 KINEMATICS OF LINEAR MOTION  
PAST TEN YEARS QUESTION

THEORETICAL QUESTIONS:

- Q: Drive  $V_f = V_i + at$ ? (2014)  
Q: Drive equation  $S = V_i t + \frac{1}{2} at^2$ ? (2005, 07, 09, 11, 13, 15, 17)  
Q: Drive equation  $2aS = V_f^2 - V_i^2$ ? (2006, 08, 10, 12, 14, 16)

NUMERICALS:

- Q: A shell is fired vertically upward with a velocity of 98 m/s. Find the maximum height reached by the shell. (2005)
- Q: A ball is dropped from a height of 176.4m. How much time will it take to reach the ground? (2006)
- Q: A car is moving with a velocity of 36 km/hr is brought to rest in 5 sec. Find its deceleration. (2008)
- Q: A motorcycle is moving with a velocity of 72 km/hr on straight road. When the brakes are applied the motorcycle comes to rest after covering a distance of 10 m. Calculate its acceleration. (2009)
- Q: A car is moving with uniform acceleration attain a speed of 36 km/hr in 2 min. Find the acceleration of a car. (2010)
- Q: A stone is dropped from a tower. It reaches the ground in 5 second. Calculate the height of the tower. (2011)
- Q: The velocity of car increases by an acceleration of  $2\text{m/s}^2$  and becomes  $20\text{m/s}$  in 5 second. Find the initial velocity of the car. (2013)
- Q: A ball is dropped from a tower it reaches the ground in 10sec calculate the height of the tower (Take  $g = 10\text{m/s}^2$ ) (2015)
- Q: A car starting from rest attains a velocity of  $20\text{m/s}$  in 5sec. Find the distance covered by the car. (2017)

MULTIPLE CHOICE QUESTIONS (MCQS):

1. The speed in a given direction is called VELOCITY. (2005, 06, 07, 09)
2. The acceleration of a ball thrown vertically upward will, in SI system is  $-9.8\text{m/s}^2$  (2010)
3. If  $V = 10\text{m/s}$ ,  $t = 5\text{sec}$ ,  $S$  will be 50m. (2011)
4. The rate of motion in specific direction is called VELOCITY. (2011)
5. Acceleration of 1kg ball for downward motion is  $9.8\text{m/s}^2$ . (2011)
6. The rate of change of velocity is known as ACCELERATION. (2013)
7. For free falling bodies value of 'g' is  $9.8\text{m/s}^2$  (2017)

CH # 04 MOTION AND FORCE  
PAST TEN YEARS QUESTIONS

THEORETICAL QUESTIONS:

2005

Q: Write down the two points of difference b/w each of the following: I) Mass & Weight.

Q: Define the following: I) Co-Efficient of friction.

Q: State the following laws: I) **Newton's 2<sup>nd</sup>** law of motion  
II) Law of conservation of momentum

2006

Q: State **Newton's law of motion** and give one example each of the first and the third laws.

2007

Q: Write 2 point of difference b/w the following: I) Mass & Weight

Q: State the following laws: I) Law of conservation of momentum.

Q: Define friction. Write its two advantages and 2 disadvantages?

2008

Q: Write 3 methods of reducing friction?

Q: State the following laws: I) Law of inertia.

2009

Q: Write two points of difference b/w the following: I) Mass and Weight.

Q: State the following laws: I) Law of inertia II) Law of conservation of momentum

2010

Q: Write down three methods of reducing friction?

Q: Define linear momentum. Write down its formula and SI unit?

2011

Q: Define the following I) Limiting friction II) Inertia

Q: Write down the difference between mass and weight?

Q: State the following Laws: I) **Newton's 2<sup>nd</sup>** law of motion.

2012

Q: Define the following laws: I) Law of conservation of momentum II) **Newton's 3<sup>rd</sup>** law.

2013

Q: Write three difference between mass and weight?

Q: State **Newton's 2<sup>nd</sup>** law and **3<sup>rd</sup>** law of motion and drive  $F = ma$ ?

Q: Write two advantages and two disadvantages of friction.

(2014)

Q: Define **Newton**?

Q: Define **inertia**?

(2016)

Q: Write down two advantages and two disadvantages of friction.

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(2017)

**Q: State Newton's laws of motion.**

Q: Two bodies of different masses are attached with a string which passes over frictionless pulley such that the bodies are moving vertically. Derive the formula  $a = \left( \frac{m_1 - m_2}{m_1 + m_2} \right) g$

NUMERICALS:

Q: A body 25N is placed on a wooden plank. How much force is required to set it in motion? If the coefficient of friction b/w the plank and the body is 0.47. (2005, 11)

Q: A bullet of mass 0.11kg is fired with a velocity of 60m/s. Calculate the momentum of the bullet. (2006)

Q: what is the mass of an object whose weight is 2294n at the surface of the earth? (2006)

Q: A body of 20 kg is moving with a speed of 15 m/s. Find its momentum. (2011)

Q: A gun of mass 10Kg fires a bullet of mass 0.05Kg with a speed of 200m/s. Calculate the velocity of the recoil of the gun. (2014)

Q: Two bodies of masses 5Kg and 4Kg are attached to the ends of a string which passes over a frictionless pulley such that two bodies hang vertically. Find the acceleration of bodies. (2014)

MULTIPLE CHOICE QUESTIONS (MCQS):

1. Which of the following is same as  $\text{kg.m/s}^2$  NEWTON (N). (2011)
2. Equivalent weight of 10kg is 98N. (2011)
3. If a mass of a body is 10kg, its weight will be 98N. (2012)
4. Newton's first law of motion gives the concept of INERTIA. (2013)
5. The unit of co-efficient of friction ( $\mu$ ) is NONE OF THESE. (2014)
6. Which is the best approximation of the weight of an object of mass 800 gram? 80N. (2016)
7.  $\text{Kg. m/s}^2$  is the unit of WEIGHT. (2017)

*CH # 05 VECTORS*  
PAST TEN YEARS QUESTIONS

THEORETICAL QUESTIONS:

2005

Q: Define scalar and vector quantities and give two example of each?

2006

Q: Define scalars?

Q: Define resultant vector and describe the addition of vector by head to tail rule?

2007

Q: Define addition of vector?

2008

Q: Write two points of difference between each of the following I) Scalar and vector.

2009

Q: Define resolution of vector? How is a vector resolve into its component vector?

2010

Q: If  $F_x$  and  $F_y$  are the horizontal and vertical component of vector  $F$ . Write down the formula for the magnitude of  $F$ . Show  $F_x$ ,  $F_y$ , &  $F$  by diagram.

2011

Q: Define resolution of vector & write down two formulae of rectangular components?

2012

Q: With the help of trigonometric ratios, find the magnitude of horizontal and vertical component of vector?

2013

Q: Define the resolution of vector and resolve vector into its components?

2015

Q: With the help of rectangular component of a vector derive the equation of the resultant vector  $F = \sqrt{f_x^2 + f_y^2}$  ?

2017

Q: With the help of diagram define negative of a vector and resultant vector.

NUMERICAL:

Q: A roller tied to a string is dragged on a floor making an angle of  $60^\circ$  with the floor. If the tension in the string is 20N. Find the force by which roller is dragged ( $\cos 60^\circ = 0.5$  &  $\sin 60^\circ = 0.866$ )  
(2007)

Q: A force of 100N act at an angle of  $60^\circ$  with the horizontal. Find its horizontal and vertical components, where  $\cos 60^\circ = 0.5$  and  $\sin 60^\circ = 0.866$   
(2012, 13)

MULTIPLE CHOICE QUESTIONS (MCQS):

1. A 25N force acts along the X-axis; its Y-component is NONE OF ABOVE. (2010)
2. When two forces  $F_x = 6\text{N}$  and  $F_y = 6\text{N}$  are acting on a body the angle between them will be  $45^\circ$ . (2012)
3. Negative of a vector is that vector which is equal in magnitude but OPPOSITE IN DIRECTION (2013)
4. It is not a vector quantity PRESSURE (2017)

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*CH # 06 STATICS*  
PAST TEN YEARS QUESTIONS

THEORETICAL QUESTIONS:

(2005)

Q: The second condition of equilibrium is mathematically expressed as  $\Sigma \tau = 0$ .

(2006)

Q: Define equilibrium and describe 3 states of equilibrium?

(2007), (2008) (No Question In These Years)

(2009)

Q: Write down 3 states of equilibrium with diagram.

(2010)

Q: Define equilibrium. Write down the condition of equilibrium and related formulae?

(2011)

(No question in this year.)

(2012)

Q: Define equilibrium. Write the name of three states of equilibrium. Give one example of each.

(2013)

Q: Define torque. Write down its unit and formula.

Q: Define                      i) Orbital velocity                      ii) Couple.

(2016)

Q: Define equilibrium and state two conditions of equilibrium.

(2017)

Q: Write three states of equilibrium.

NUMERICAL:

Q: A force of 50 N acts on a body. If the moment arm is 0.5 m. find the value of torque. (2010)

Q: A force of 100N rotates a body about its axis. If the arm of force is 2.5cm, find the magnitude of the torque. (2007)

Q: A 5m long beam pivoted into a wall, a force of 100N is applied vertically at the far end of beam. Find the torque produced. (2014)

MULTIPLE CHOICE QUESTIONS (MCQS):

1. The second condition of equilibrium is mathematically expressed  $\Sigma \tau = 0$ . (2005)

2. The point at which whole weight of the body appears to act is called CENTER OF GRAVITY. (2008)

3. A body will be in state of stable equilibrium if its center of gravity lays BELOW THE POINT OF SUSPENSION. (2010)
4. If the center of gravity of a body is lower than its point of support then its equilibrium will be STABLE. (2013)
5. A cone standing on its base is an example of this type of equilibrium: STABLE. (2016)

**CH # 07 CIRCULAR MOTION AND GRAVITATION**  
PAST TEN YEARS QUESTIONS

THEORETICAL QUESTIONS:

(2005)

**Q: State Newton's law of universal gravitation and derive  $F = Gm_1m_2/r^2$ .**

(2006)

**Q: State the Newton's law of universal gravitation and derive  $g = GM/R^2$ .**

(2007)

Q: Define centripetal force, centripetal acceleration and write their formula and unit?

(2008)

Q: Write two points of difference between the following: I) G & g.

**Q: Define Newton's law of universal of gravitation and find the equation for the mass of the earth with the help of  $F = Gm_1m_2/r^2$ .**

(2009)

**Q: State Newton's law of universal gravitation and derive  $F = Gm_1m_2/r^2$ .**

Q: Define centripetal force. What are the factors on which it depends? Write down the formula of centripetal force.

Q: Define: I) Centre of gravity II) Torque.

(2010), (2011 & 2012) (No Question In This Year)

(2013)

**Q: State Newton's law of universal gravitation and derive  $F = Gm_1m_2/r^2$ .**

(2016)

Q: Define orbital velocity and derive the formula  $v = \sqrt{\frac{GM_e}{R}}$ .

**Q: State Newton's law of universal gravitation and derive the formula for mass of earth with its help.**

NUMERICAL:

Q: Calculate the tension in a string 50m long when it is tied at its end to mass of 0.2 Kg & whirled in a circle with a speed of 100 m/s. (2005)

Q: What is the mass of an object whose weight is 294 N at the surface of the earth? (2006)

Q: A mass of 10 kg at the end of the string is being whirled in a circle of radius 5 cm with a speed of 4 m/s. what will be centripetal force. (2008)

Q: A stone of 200 gm mass tied to one end of a string of length 50 cm is being whirled from the other end in a circle with the constant speed of 2m/s. Find the tension in the string. (2010)

Q: Compute the gravitational force of attraction between two boys of masses 50Kg and 40Kg respectively apart from each other by two meter. (2016)

Q: A car is moving in a circular track of radius 30m at constant speed of 20m/s. Find the centripetal acceleration of the car. (2017)

MULTIPLE CHOICE QUESTIONS (MCQS):

1. The value of G is  $6.67 \times 10^{-11} \text{ Nm}^2/\text{Kg}^2$ . (2007, 09)
2. The mass of earth is  $6 \times 10^{24} \text{ Kg}$ . (2010, 13, 14)
3. In SI unit value of G is  $6.67 \times 10^{-11} \text{ Nm}^2/\text{Kg}^2$ . (2011)
4. Orbital velocity of a satellite near the surface of earth is: 7920Km/s. (2016)
5. If the speed of a body moving in a circle is double, its centripetal acceleration becomes FOUR TIMES. (2016)
6. The value of G was determined experimentally by CAVENDISH. (2017)

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CH # 08 WORK, POWER AND ENERGY  
PAST TEN YEARS QUESTIONS

THEORETICAL QUESTIONS:

(2005)

Q: Define work and write down its formula and its S.I unit.

Q: Define energy, Kinetic energy and derive  $K.E = \frac{1}{2} mV^2$ .

(2007)

Q: Define potential energy, kinetic energy and derive the relation  $K.E = \frac{1}{2} mV^2$ .

(2008)

Q: Write down the two points of difference between the following: i) Kinetic energy and Potential energy.

(2009)

Q: Define kinetic energy and derive the relation between  $K.E = \frac{1}{2} mV^2$ .

(2010)

Q: Define Kinetic energy and potential energy and write down two points of difference between them.

(2011)

Q: Define work and write its two formulas.

(2012)

Q: Define potential energy and kinetic energy and derive the equation  $K.E = \frac{1}{2} mV^2$ .

(2013)

Q: Define work and energy. State the law of conservation of energy.

(2014)

Q: Define power?

Q: Define kinetic energy and derive  $K.E = \frac{1}{2} mV^2$ .

(2016)

Q: Define power and derive the equation  $P = F.V$ ?

NUMERICAL:

Q: A 100 kg car is accelerated from rest and at  $4 \text{ m/s}^2$  for 10 sec, calculate the work done. (2008)

Q: What is kinetic energy of 200 kg car which is travelling with velocity of 36km/h? (2008)

Q: Find the work done when a force of 400 N acting at an angle of  $60^\circ$  with the ground. ( $\cos 60^\circ = 0.5$ ).  
(2009)

Q: A force of 588N acts on a box to move it at a distance of 4m in 40sec. Calculate the power.  
(2012)

Q: With what constant velocity can a 1960watt motor raise a mass of 100Kg.  
(2016)

Q: What is the kinetic energy (K.E) of 2000Kg car travelling at velocity of 90Km/h.  
(2017)

MULTIPLE CHOICE QUESTIONS (MCQS):

1. In S.I System unit of work/Energy is JOULE. (2005, 06, 10, 13)
2. The work will be negative if the angle between force and displacement is:  $180^\circ$ . (2016)
3. One horse power is equal to 746 Watt (2017)

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*CH # 09 MACHINES  
PAST TEN YEARS QUESTIONS*

THEORETICAL QUESTIONS:

(2005)

Q: Define lever and describe its kind and principle.

(2006)

Q: Define wheel and axel and determine its mechanical advantage.

(2007)

Q: What is a machine? Define its mechanical advantage. Draw the diagram of an inclined plane and wheel and axel and write the formula for their mechanical advantage.

(2008)

Q: Mechanical advantage of screw jack =  $\frac{2\pi rd}{h}$ .

(2009)

Q: Define machine and its mechanical advantage.

Q: Find the mechanical advantage of an inclined plane.

(2010)(No question)

(2011)

Q: Define machine and write down the name of 4 simple machines.

(2012)(No question in this year)

(2013)

Q: Define the following: I) Lever      II) Inclined Plane      III) Pulley

(2014)

Q: Drive Mechanical advantage formula for inclined plane?

(2016)

Q: State principle of lever and derive formula for mechanical advantage of lever.

(2017)

Q: What is inclined plane? Calculate its mechanical advantage.

NUMERICAL:

Q: The length of the handle of a screw jack is 42 cm and its pitch is 0.001 m. Find its mechanical advantage.  
(2010)

MULTIPLE CHOICE QUESTIONS (MCQS):

1. Mechanical advantage of screw jack is equal to  $\frac{2\pi rd}{h}$ . (2008)
2. For an ideal machine the OUTPUT IS ALWAYS IS EQUAL TO INPUT. (2010)
3. It is not a simple machine BICYCLE. (2012)
4. It is a second kind of lever DOOR. (2013)
5. The mechanical advantage of moveable pulley is 2 (2017)

CH # 10 PROPERTIES OF MATTERS  
PAST TEN YEARS QUESTIONS

THEORETICAL QUESTIONS:

(2005)

Q: State the following laws/principles. I) Hook's law                      II) Archimedes principle.

(2006)

Q: State Pascal's principle and describe the construction and working of the hydraulic press with diagram.

Q: State the following law I) Pascal's principle.

Q: State Hook's law and define the formula of Young's modulus with the help of this law.

(2008)

Q: State Pascal's principle and explain the working of the hydraulic brake system with the help of diagram.

Q: State the following law I) Pascal's principle.

Q: Define the following terms: I) Elasticity

(2009)

Q: State the following laws/principles.                      I) Archimedes principle

Q: Define Stress. Strain and state Hook's law and write the formula of Young's modulus of elasticity.

(2010)

Q: State Pascal's principle. Describe any one of its application.

(2011)

Q: State the following laws/principles. I) Hook's law                      II) Archimedes principle.

(2012)

Q: State the Pascal's principle and writ three uses in daily life.

(2013)

Q: State the following laws/principles. I) Hook's law                      II) Archimedes principle

III) Pascal's law.

Q: Write down the two differences between stress and strain?

(2016)

Q: State the following laws/principles. I) Hook's law

Q: Define Pascal's law and explain any one of its application by diagram.

(2017)

Q: Define pressure. Write its formula and S.I unit.

NUMERICAL:

No Numerical in last ten years papers.

MULTIPLE CHOICE QUESTIONS (MCQS):

1. The pressure of liquid depend UPON ITS DENSITY AS WELL AS HEIGHT ABOVE THE POINT INSIDE THE LIQUID. (2010)
2. The maximum density of pure water is at 4<sup>0</sup>C. (2010, 14)
3. Archimedes principle is applied to determine SPECIFIC GRAVITY. (2013)
4. The maximum density of pure water is at 4<sup>0</sup>C. (2010)
5. Which one has the maximum elastic limit: CROWN GLASS. (2016)
6. Rain drops are spherical in shape because of this property of water SURFACE TENSION (2017)

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*CH # 11 HEAT*  
PAST TEN YEARS QUESTIONS

THEORETICAL QUESTIONS:

(2005)

**Q: State Boyle's law, Charles's law and derive the general gas equation.**

(2006)

Q: Define the following: I) Specific heat.

Q: Explain the working of main part of refrigerator with the help of diagram.

Q: The heat energy evolved in the change of state is called Latent heat.

(2007)

Q: Write two points of difference between the following: I) Heat and temperature.

Q: Write the effect of pressure on boiling point of liquid and the melting point of the solid. Explain one of these with the help of example.

(2008)

Q: Draw a label diagram of refrigerator and describe working of its main part.

Q: Define evaporation and write any 4 factor on which evaporation depends.

(2009)

Q: Write down two points of difference between the following I) heat and temperature.

Q: State the following laws/principles: I) Law of heat exchange.

**Q: State Boyle's law, Charles's law and write the formula of the general gas equation.**

(2010)

Q: Define evaporation. Write down any 4 factor on which rate of evaporation depends.

(2011)

**Q: State Boyle's law, Charles's law and pressure law. Derive  $PV = nRT$ .**

(2012)

**Q: Define the following laws: I) Boyle's law.**

Q: Define the co-efficient of linear expansion and coefficient of volumetric expansion. Write the relation between them.

(2013)

**Q: State Boyle's law, Charles's law also derive  $PV = nRT$ .**

Q: Define the following. I) Surface tension II) Viscosity

(2014)

Q: Describe any three laws of fusion.

Q: What is bimetallic stripe? Describe its three applications.

Q: Define specific heat?

(2016)

Q: Write down three differences between heat and temperature.

Q: State the following laws/principles. I) Boyle's law

Q: Define anomalous expansion of water and give its two effects.

**Q: Derive the equation  $\beta = 3\alpha$ ?**

(2017)

Q: What is bimetallic strip? Write the name of its two applications.

**Q: State the laws: (I) Charles's law**

NUMERICAL:

Q: How much heat energy will be required to raise the temperature of 100gm of iron through  $10^{\circ}\text{C}$ . The specific heat of iron is  $499.8 \text{ kJ/gm}^{\circ}\text{C}$ . (2005, 11)

Q: Find the amount of heat required to raise the temperature of 100 mg of water from  $10^{\circ}\text{C}$  to  $60^{\circ}\text{C}$ . (Specific heat of water is  $420 \text{ kJ/kg}^{\circ}\text{C}$ ) (2007)

Q:  $117.6 \text{ J}$  heat is required to raise the temperature of 10gm of silver by  $50^{\circ}\text{C}$ ; find the specific heat of the silver. (2010)

Q: How many amount of heat is required to raise the temperature of 100 gm water from  $20^{\circ}\text{C}$  to  $80^{\circ}\text{C}$  (Specific heat of water is  $4200 \text{ J}$ ) (2012)

Q: How many amount of heat is required to raise the temperature of 800 gm of iron through  $50^{\circ}\text{C}$  (Specific heat of iron is  $499.8 \text{ J/Kg}^{\circ}\text{C}$ ) (2013)

Q: Find the amount of heat required to convert 10Kg at  $0^{\circ}\text{C}$  into water without changing the temperature while latent heat of fusion of ice is  $336000 \text{ J/Kg}$ . (2014)

Q: Calculate the volume occupied by 2 moles of a gas at  $27^{\circ}\text{C}$  and pressure of 1atm equals  $1.01 \times 10^5 \text{ N/m}^2$  ( $R = 8.31 \text{ J/mol.K}$ ) (2015)

Q: A steel rod has a length of 10m at a temperature of  $25^{\circ}\text{C}$ . Calculate the increase in length if it is heated to  $35^{\circ}\text{C}$ . For steel ( $\alpha = 1.1 \times 10^{-5} \text{ K}^{-1}$ ) (2016)

MULTIPLE CHOICE QUESTIONS (MCQS)

1. The heat energy evolved in the change of state is called LATENT HEAT. (2006)
2. Evaporation takes place at All TEMPERATURE. (2012)
3. The conversion of liquid into vapors at all temperature is called Evaporation. (2013)
4. The viscosity of ethanol is 1.000. (2014)
5. The latent heat of vaporization of water is  $2.26 \times 10^6 \text{ J/Kg}$ . (2014)
6. Boiling point of pure water is 373K. (2017)

CH # 12 WAVES AND SOUND  
The PAST TEN YEARS QUESTIONS

THEORETICAL QUESTIONS:

(2005)

**Q: Define wave length and frequency and drive  $V = f \lambda$ .**

Q: Define the following. I) Loudness of sound.

Q: The maximum beat frequency that a human ear can detect is 7 beat per second.

(2006)

Q: Write the characteristics of transverse waves and longitudinal waves.

Q: Write down any two points of difference between the following: I) Musical sound and noise.

(2007)

Q: Define wave length and frequency and drive the relation  $f = \frac{v}{\lambda}$  Where V is the velocity.

(2008)

Q: Define loudness of sound give any three factor on which it depends.

Q: Define the following I) Time period II) Amplitude.

(2009)

Q: Define wave **length, frequency and velocity of wave and describe equation  $V = f \lambda$ .**

Q: Define simple harmonic motion and verify it with the help of simple pendulum.

Q: State 3 characteristics of musical sound and describe any one it.

(2010)

Q: Define the following: I) Echo II) Ultrasonic wave III) beats.

Q: Write down characteristics/properties of simple harmonic motion.

(2011)

**Q: Prove that  $V = f \lambda$ .**

(2012)

Q: Define the following I) Echo.

Q: Define the loudness of sound write three factors on which the loudness of sound depends.

Q: Define the following: I) Simple Harmonic motion II) Frequency III) Time period IV) Pitch

(2014)

Q: Write three differences between transverse and longitudinal waves.

Q: Define Resonance?

(2016)

Q: Define: I) Interference II) Stationary waves III) Beats

Q: Write two difference between the following. I) Longitudinal waves and transverse wave

(2017)

Q: Define wave length, time period and frequency.

Q: Define musical sound and write its three characteristics.

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#### NUMERICALS:

Q: Calculate the length of second pendulum. (2005, 12)

Q: 40 waves pass through a point on the surface of a pond in 2 sec. calculate the wave length. If the velocity of the wave is 3.5 m/s. (2006)

Q: Find the length of simple pendulum whose time period is 2 sec. (2007)

Q: When a sound waves of frequency 200 Hz and length 3 m pass through a medium. Calculate the velocity of the wave in that medium. (2008)

Q: The frequency of vibration of wire is 200 Hz. Find its time periods. (2010)

Q: A sitar string vibrates at 400 Hz. What is the time period of this vibration? (2011)

Q: 20 waves per second pass through a point on the surface of the pond. Calculate the wave length if the velocity of wave is 3.5m/s. (2014)

Q: Find the time period of a simple pendulum whose length is 288cm. (2016)

Q: Calculate the length of second's pendulum. Taking 'g' is equal to  $10\text{m/s}^2$ . (Second's pendulum has a time period of 2 seconds). (2017)

MULTIPLE CHOICE QUESTIONS (MCQS):

1. The wave length of red light is GREATER THAN the wave length of violet light. (2007)
2. Sound waves cannot travel through VACUUM. (2010)
3. The speed of light in vacuum is  $3 \times 10^8\text{m/s}$ . (2010)
4. The maximum beat frequency that human ear can detect is 7. (2011)
5. Loudness of sound depends UPON ALL OF THEM (2011)
6. The time period of second pendulum is 2SEC. (2012)
7. The wave produced by vibrating body in air is LONGITUDINAL WAVE. (2012)
8. Speed of sound at NTP (Normal temp. and pressure) is 336m/s. (2012)
9. Sound waves are LONGITUDINAL WAVE. (2013)
10. The wave produced by vibrating body in air is LONGITUDINAL WAVE. (2014)
11. Production of beats is due to the INTERFERENCE of sound waves. (2014)
12. If frequency of pendulum is 10Hz then time period will be 0.1 SEC. (2014)
13. It is a scalar quantity FREQUENCY. (2016)
14. The minimum distance between sound and barrier for distinct echo is 17m. (2016)
15. Specific heat of ice is:  $4200\text{Jkg}^{-1}\text{K}^{-1}$ . (2016)
16. Loudness of sound depends upon AMPLITUDE (2017)

**FAHAD AKHTER**

CH # 13 PROPAGATION AND REFLECTION OF LIGHT  
PAST TEN YEARS QUESTIONS

THEORETICAL QUESTIONS:

(2005)

Q: Draw the image formed by a convex mirror. Describe its characteristics (the object may be placed at any point).

Q: Why are concave mirror used in the head lights of an automobile? [Scientific reason]

Q: Define the following I) Pole II) Magnification

Q: Draw the ray diagram of the image formed by a plane mirror and write its characteristics.

Q: The image formed by a convex mirror is always virtual, erect and smaller than the object itself.

(2006)

Q: Write two points of difference between the following: I) Real image and Virtual image.

(2008)

Q: Define the following: I) Focal length

Q: Write two points of difference between of the following: I) Real image and Virtual image.

Q: With the help of ray diagram show the nature, size and position of the image formed in a concave mirror when:

- i. **The object is place beyond 'C'.**
- ii. The object is place between C and f.

(2009)

Q: Draw a ray diagram of the image formed by a plane mirror and writes its three characteristics.

Q: Define the following: I) Regular reflection.

(2010)

Q: Define the following: I) Regular reflection. II) Radius of curvature III) Magnification of concave mirror.

Q: Draw ray diagram only to show the nature position and size of the image formed by a concave mirror when the object is placed:

- i. At the center of curvature of the mirror.
- ii. Between the center of curvature and the principle focus.

(2011)

Q: Define the following I) Magnification II) Focal length of concave mirror.

Q: Draw ray diagram for image formed by a concave mirror and write its characteristics.

(2012)

Q: Write three uses of concave mirror.

Q: Write down three characteristics of the image formed by a plane mirror.

(2013)

Q: Write down three characteristics of the image formed by a plane mirror.

Q: Define reflection of light and state the two laws of reflection.

(2014)

Q: Show the image formation and characteristics by concave mirror with the help of ray diagram.

(2017)

Q: Write four uses of spherical mirrors.

#### NUMERICALS

Q: The focal length of concave mirror is 10 cm where an object should be placed so as to get its real image magnified twice. (2005)

Q: An object is placed at a distance of 15 cm from a concave mirror of focal length 10 cm. find the position and nature of the image formed. (2006)

Q: An object is placed at a distance of 15cm from a concave mirror of focal length 10cm; find the position and nature of the image formed. (2007, 09)

Q: A body is kept at a distance of 10 cm from a concave mirror. The radius of curvature of the mirror is 10cm, find the position and the nature of the image. (2008)

Q: The radius of curvature of concave mirror is 20cm. where should an object be placed so as to get its real image magnified twice. (2012)

Q: The focal length of a concave mirror is 10cm. where should an object be placed so as to get its real image magnified four times. (2016)

MULTIPLE CHOICE QUESTIONS (MCOS):

1. The pin hole camera was invented by IBN-AL-HAITHAM. (2006)
2. The image formed by a PLANE MIRROR is always virtual, erect and smaller than the object itself. (2006)
3. Magnification =  $q/P$ . (2009)
4. A virtual, erect and diminished image is always obtained from a CONVEX mirror. (2010)
5. Which of the following never gives a real image? PLANE & CONVEX MIRROR. (2011)
6. It always gives virtual image ALL OF THEM. (2014)
7. If  $P = 15\text{cm}$ ,  $q = 30\text{cm}$ , the magnification is 2. (2014)
8. If  $q = 6\text{cm}$  and  $p = 3\text{cm}$ , the magnification is 2. (2016)
9. The radius of curvature of concave mirror is 20cm its focal length will be 10cm (2017)

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*CH # 14 REFRACTION OF LIGHT AND OPTICAL INSTRUMENT*  
PAST TEN YEARS QUESTIONS

THEORETICAL QUESTIONS:

(2005)

Q: Define total internal reflection with the help of ray diagram and write down the condition necessary for it.

(2006)

Q: Define the following terms: I) Critical angle II) short sightedness.

Q: Describe the construction and working of compound microscope with the help of ray diagram.

**Q: State the following laws: I) Snell's law.**

Q: The index of refraction of ruby is less than the index of refraction of diamonds why?

(2007)

Q: Define critical angle and total internal reflection write two necessary conditions for total internal reflection.

Q: Name two main defects of human eye. Show the defect and their corrective devices with the help of ray diagram.

Q: With the help of ray diagram show the working of simple microscope (Magnifying glass) and write the formula for its magnification.

(2008)

Q: Explain the working of compound microscope with the help of ray diagram.

(2009)

Q: Define the following: I) Refractive index.

Q: Define total internal reflection with the help of ray diagram and write down the two conditions necessary for it.

(2010)

Q: Define the following: I) Refractive index II) Critical angle III) Power of lens IV) Magnifying glass.

(2011)

Q: Draw the ray diagram of compound microscope and write it's working.

**Q: Define the following laws: I) Snell's law.**

(2012)

Q: Draw neat labelled ray diagram of simple microscope .write down the characteristic of the image formed by it and the formula of its magnifying power.

(2013)

Q: Draw the ray diagram of compound microscope and write it's working.

(2014)

Q: Draw the diagram of defects of eye. Describe short sightedness and long sightedness.

Q: With the help of figure write 4 rules of reflection of rays of light by concave mirror.

(2016)

Q: Define irregular reflection of light and also write two points of its importance.

Q: State the following **laws/principles. I) Snell's law**

Q: Define the following: I) Power of lens

Q: Derive ray diagram of compound microscope and describe its working.

(2017)

Q: Draw a ray diagram of an astronomical telescope and describe its working.

NUMERICALS:

Q: The focal length of convex lens is 1 m. An object is placed at a distance of 2 m before it. Determine the position, nature and magnification of the image.

(2005)

Q: A convex lens form a virtual image of an object placed 5 cm away from the optical centre at a distance of 10 cm. determine the focal length of the convex lens. (2010)

Q: Find the focal length of convex lens if  $P = 5\text{cm}$ ,  $q = 10\text{ cm}$  and the image formed is virtual. (2011, 13)

Q: The focal length of a convex lens is 20cm. If formed by it is twice in size, find the position of the object. (2014)

Q: Calculate the distance of object from a convex lens having a focal length of 15cm if the magnification is 3 and the image is real. (2017)

#### MULTIPLE CHOICE QUESTIONS (MCQS):

1. The law of refraction was first introduced by SNELL. (2010)
2. Refractive index of water is 1.33. (2011)
3. Human eye is similar to CAMERA. (2011)
4. The refractive index of ruby is 1.54. (2012)
5. The least distance of vision for a normal eye is 25cm. (2012)
6. The speed of light in water is  $2.26 \times 10^8\text{m/s}$ . (2012)
7. The focal length of +2 diopter convex lens is 50cm. (2012)
8. If  $q = 6\text{cm}$  and  $P = 2\text{cm}$ , magnifying power of lens will increase 3 times. (2012)
9. For total internal reflection the angle of incidence must be GREATER THAN the critical angle. (2013)
10. Which one of the following has maximum value of refractive index DIAMOND. (2014)
11. Which one has the maximum index of refraction DIAMOND. (2016)
12. Refractive index of glass is 1.52 (2017)

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### CH # 15 NATURE OF LIGHT AND ELECTROMAGNETIC SPECTRUM

#### PAST TEN YEARS QUESTIONS

##### THEORETICAL QUESTIONS:

(2005)

Q: Describe the quantum theory of light.

Q: Define the following: I) Rainbow

(2006)

Q: Define spectrum and describe the waves of which an electromagnetic spectrum consists?

(2007)(No question)

(2008)

Q: Define Photons and write down its two characteristics.

(2009)

**Q: Describe the Newton's corpuscular theory of light.**

(2010)

Q: Define: I) Photon II) Dispersion of light.

Q: What is wave theory? Write down two phenomena which support this theory.

(2011)

Q: Describe quantum theory of light.

(2012)

**Q:What is Newton's corpuscular theory of light? Write down two phenomenon which support this theory.**

(2013)

Q: Define the following: I) Photon II) Dispersion of light III) Rainbow.

(2014)

Q: Define spectrum?

Q: With the help of prism, draw solar spectrum of dispersion of light.

(2016)

Q: Describe quantum theory of light and explain dual nature of light.

Q: Define the following: I) Dispersion of light

(2017)

Q: **Write Newton's corpuscular theory of light.**

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**MULTIPLE CHOICE QUESTIONS (MCQS):**

1. A ray white light thrown on to a glass prism cannot be FOCUSED. (2013)
2. Rainbow appears due to DISPERSION OF LIGHT. (2014)
3. X-rays wave length ranges from 1.0 nm to 0.01 nm. (2016)

*CH # 16 ELECTRICITY*

*PAST TEN YEARS QUESTIONS*

**THEORETICAL QUESTIONS:**

(2005)

Q: Write down any two points of difference between the following. I) Insulator and conductor.

Q: Draw a diagram of series and parallel combination of resistance and write down two characteristics of the resistance connected in parallel

Q: An ammeter is always connected in series to measure the current in circuit.

(2006)

Q: Define the following terms: I) Farad.

Q: The commercial unit of electrical energy is kilowatt hour.

Q: What is galvanometer? How is it converted into ammeter and voltmeter?

**Q: State the following laws: I) Ohm's Law II) Coulombs law III) Joule's law.**

(2007)

Q: Define the following: I) Ampere II) Fuse.

Q: Joules/Coulomb is the unit of Potential difference.

Q: Write down the point difference between the following: I) Direct current & Alternating current.

(2008)

Q: Define the following: I) Farad

Q: The device which collects the charges is called capacitor.

Q: Write down the point difference between the following: I) Direct current & Alternating current.

Q: Define coulombs law and derive its formula?

(2009)

Q: Define the following: I) Direct current.

**Q: State and explain the coulomb's law and derive the equation  $F = Kq_1q_2/r^2$ .**

Q: Write down the three characteristics of resistance join in series and draw the diagram of series resistance.

(2010)

Q: What is an electric capacitor? Write down three factors upon which its capacitance depends.

(2011)(No question)

(2012)

Q: Define the following: I) Alternating current (A.C) II) Electric field, iii) Electrostatic induction.

Q: Drive the relation  $W = I^2Rt$ .

Q: write down any three characteristics of resistance connected in parallel.

Q: Define the capacity of capacitor. Write down three factors upon which capacity of capacitor depends.

Q: Define coulombs law. Derive the equation  $F = Kq_1q_2/r^2$ .

(2013)

Q: State the following laws: I) Coulomb's law II) Ohm's law III) Joule's law.

(2017)

Q: Define primary cell and write its four examples.

Q: State the laws: I) Coulomb's law II) Ohm's law

#### NUMERICALS

Q: Find the resistance of an electric bulb is a 0.6A current is passing through it and the potential difference across the bulb is 90 V. (2005)

Q: What is the current through a conductor with a resistance of 19 ohms when the potential difference across it is 12V? (2006)

Q: Find the potential difference between the two ends of a conductor if its resistance is 5 ohm and a current of 500 mill ampere is passing through it. (2007)

Q: Find the current through the heater which has a resistance of 20 ohms and a potential difference of 220V is supplied to it. (2008)

Q: Find the potential difference between the two ends of a conductor if its resistance is 5 ohm and a current of 500 mill ampere is passing through it. (2009)

Q: A 100 watt bulb operates in 220V circuit; find the current through the bulb. (2010)

Q: Calculate the amount of current passing through an electric heater if it takes 1800C of charge.(2011)

Q: Find the resistance of bulb if 0.6A current is passing through the bulb and the potential difference across the bulb is 90 volt. (2012)

**Q: Three resistors of  $4\Omega$ ,  $6\Omega$  and  $12\Omega$  are connected in parallel with a source of 6V. Find the current flow through the circuit. (2013)**

Q: Calculate the amount of work done in carrying a charge of  $+25\mu\text{C}$  from A to B. If A is a potential of -60V and B is at 10V. (2014)

Q: Calculate the current of electric heater if 1800C charge passed through it in 3min. (2016)

Q: Find the resistance of an electric bulb if 0.60A current is passing through it and the potential difference across the bulb is 90V. (2017)

MULTIPLE CHOICE QUESTIONS (MCOS):

1. The commercial unit of electrical energy is KILOWATT HOUR. (2006)

2. The change on an electron is  $1.6 \times 10^{-9}\text{COL}$ . (2007)

3. J/col is the unit of VOLT. (2007)

4. The device which collects the charges is called CAPACITOR. (2008)

5. The substance used as a medium between the two plates of a capacitor is called DIELECTRIC. (2008)

6. If a low resistance is connected parallel to a galvanometer, it is converted into AMMETER. (2008)

7. The unit of charge is COULOMB. (2009)

8. The unit of current is AMPERE. (2009)

9. If  $I = 1.5\text{amp}$ ,  $R = 10\text{ Ohms}$  then  $V$  is 15 VOLTS. (2010)

10. The substance placed between the conductor plates of capacitor is called DIELECTRIC. (2011)

11. The rate of flow of charge in a conductor is called CURRENT. (2012)

12. J/Col is called VOLT. (2012)

13. Three resistance of 3 ohm are connected in parallel. Their total resistance will be ONE OHM. (2013)

14. Rechargeable cell is called PRIMARY CELL. (2014)

15. Kilowatt hour is the commercial unit of ELECTRICAL ENERGY. (2017)

*CH # 17 MAGNETSIM AND ELECTROMAGNETSIM  
PAST TEN YEARS QUESTIONS*

THEORETICAL QUESTIONS:

(2005)

Q: Define the following: I) Magnetic field.

Q: Write down four similarities between magnetism and static electricity?

(2006)

Q: Draw a neat and label diagram of an electric bell and write it's working.

(2007)

Q: Write four points on the similarities between magnetism and static electricity.

Q: What is an electric motor? Write the factor on which speed of electric motor depends.

(2008)

Q: With the help of label diagram explain the working of an electric bell.

(2009)

Q: Define the following: I) Electromagnet.

(2010)

Q: What is an electromagnet? Illustrate it with a label diagram and write down its two uses.

(2011)

Q: Draw a label diagram of an electric bell?

(2012)(No question in this year)

(2013)

Q: With the help of label diagram explain the working and construction of electric bell.

Q: What is ammeter? How is a galvanometer change into ammeter? Also state how an ammeter is connected in an electrical circuit?

(2014)

Q: How can we convert galvanometer into voltmeter and ammeter? (Show only by label diagram)

Q: Define electric motor and write down two factors on which its speed depends.

(2016)

Q: Write four similarities between static electricity and magnetism.

(2017)

Q: Write the construction and working of electric bell with diagram.

#### MULTIPLE CHOICE QUESTIONS (MCQS):

1. The relation between the electric current and magnetic field was discovered by CHRISTIAN OERSTED. (2005, 12)
2. An ammeter is always connected in SERIES to measure the current in circuit. (2005)
3. If a low resistance is connected parallel to a galvanometer, it is converted into AMMETER. (2008)
4. Shunt converts a galvanometer into AMMETER. (2010)
5. Shunt converts a galvanometer into AMMETER. (2010)
6. To measure potential difference the voltmeter is always connected in the circuit in PARALLEL. (2013)
7. Right hand rule is introduced by MAXWELL. (2014)
8. To measure the current in a circuit, an ammeter is always connected IN SERIES. (2016)
9. It is a device which converts electrical energy into mechanical energy ELECTRIC MOTOR. (2016)

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*CH # 18 ELECTRONICS*

*PAST TEN YEARS QUESTIONS*

THEORETICAL QUESTIONS:

(2005)

Q: What is transistor? Describe two types of transistor with the help of diagram.

Q: Define the following: 1) Radar.

(2006)

Q: Write down any two points of difference between the following: I) p-type substances & n-type substances. Q: What is radar? Write three uses of radar.

(2007)

Q: Define the following: I) Rectification.

Q: Write down any two points of difference between the following: I) p-type substances & n-type substances.

(2008)

Q: Write three advantages of a transistor.

Q: Define the following: I) Doping.

(2009)

Q: Define the following: I) Radar II) Transistor

Q: Write down any two points of difference between the following: I) p-type substances & n-type substances.

(2010)

Q: Define rectification? Describe the working of a semi-conductor diode as a rectifier.

(2011)

Q: What is a resistor? Write its two advantages.

Q: Define the following: I) Doping.

Q: What is radar? Write its three uses.

(2012)

Q: What is a Transistor? Describe two types of transistor with the help of diagram.

Q: Define the following I) Doping.

(2013)

Q: Define the following I) Doping II) Electronics III) Rectification.

Q: Write down the two difference between the following: I) P-type and n-type substances.

(2014)

Q: Write three difference between forward and reverse biased.

(2017)

Q: Define (ii) Rectifier

Q: Write three difference between forward and reverse biased.

Q: What is radar? Write its three uses.

#### MULTIPLE CHOICE QUESTIONS (MCQS):

1. Holes are the charge carriers on the p type of the material. (2005)
2. The rectification is obtained from a RESISTOR. (2010)
3. Amplification can be obtained by TRANSISTOR. (2011)
4. N-Type material is formed when semiconductor is doped with element PENTAVALENT (2017)

**FAHAD AKHTER**

*CH # 19 NUCLEAR PHYSICS*

*PAST TEN YEARS QUESTIONS*

THEORETICAL QUESTIONS:

(2005)

Q: Write down three properties of gamma rays.

Q: Define radioisotopes and write down one use of radioisotopes in the following field:

I) Industry      II) Agriculture      III) Medicine.  
Q: Define the following:      I) Fusion      II) Half-life of an element.

(2006)

Q: Write down four properties of alpha rays?

(2007)

Q: Define the following: I) half-life of an element.

Q: Name four radioisotopes and write their uses in the field of medicine.

Q: Write down any two points of difference between the following: I) Fission & fusion reaction.

Q: Write three characteristics of alpha rays.

(2008)

Q: Write down any two points of difference between the following: I) Fission & fusion reaction II) Fission & fusion reaction.

Q: Define radioisotopes and write any three uses of radioisotopes in industry.

(2009)

Q: Write down four properties of alpha rays?

Q: Define the following: I) half-life of an element.

Q: Write down any two points of difference between the following: I) Fission & fusion reaction.

(2010)

Q: Write down three precautions to minimize radiation hazards.

Q: What is natural radioactivity? Write down four properties of alpha rays.

(2011)

Q: Define the following: I) Half-life of radioactive elements II) Doping.

Q: Define radioisotopes and state its one use in agriculture and two uses in medicine.

Q: Define fission reaction. Write down its equation and draw the diagram for chain reaction.

(2012)

Q: Write three differences between alpha rays and beta rays.

Q: Define the following I) Proton II) Nuclear reactor

Q: Define radio isotopes. Write the uses of radio isotopes in medicines.

(2013)

Q: Write down the two differences between the following: I) Fission and Fusion reaction.

(2014)

Q: Write down any three differences between alpha and beta rays.

Q: Define nuclear fission reaction. Write down its equation and explain chain fission reaction.

Q: Draw the diagram of nuclear reactor and describe the importance of boron rod.

(2016)

Q: Write two uses of radioisotopes in medicine and one use in industry.

Q: Write down three precautions to minimize the radiation hazards.

Q: Define the following: I) Half-life of an element      II) Nuclear reactor

Q: Write two differences between the following: I) Fission reaction and fusion reaction

(2017)

Q: Define (i) Nuclear fission (iii) Half-life of an element

Q: Write four properties of Alpha rays.

NUMERICALS:

Q: How much energy is released due to conversion of  $10^{-6}$  kg of mass into energy when the speed of light is  $3 \times 10^8$  m/s? (2006)

Q: In a nuclear reaction  $9.0 \times 10^{10}$  J energy is released due to conversion of mass into energy. How much mass has been converted into energy. (2011)

Q: The half-life of radium is 1600 years. Find the amount of radium left after 4800 years, if its mass is 60gm. (2013)

Q: How much amount of heat released when 20gm of mass completely transform into energy by Einstein equation. (2014)

Q: Half-life of  ${}_{53}^{131}$  I is 8 days. Find the amount of iodine left after 16 days from a sample of 100gm. (2016)

Q: In a nuclear reaction  $9.0 \times 10^{10}$  J energy is released due to conversion of mass into energy. How much mass has been converted to energy. (2017)

MULTIPLE CHOICE QUESTIONS (MCQS):

1. In FISSION reaction two lighter nuclei are combined to form a heavy nucleus (2006)
2. The number of protons in a nucleus is called ATOMIC NUMBER. (2008)
3. The elements having mass number more than 82 are called RADIOACTIVE ELEMENTS. (2009, 11, 13)
4. Gamma rays are ELECTROMAGNETIC RADIATIONS. (2010)
5. The lightest particle in an atom is ELECTRON. (2012)
6. Which of the following is used for the study of thyroid glands? I-132. (2014)
7. In P type substance the charge carrier are HOLES. (2016)
8. Nucleus of this atom is called  $\alpha$ -particles: HELIUM. (2016)
9. The lightest particle of an atom is ELECTRON. (2017)
10. In nuclear reactors control rods are of BORON. (2017)