# < WorkSheet

# Physics

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# Attempted MCQs
## 0/35

1) **Isotopes have same:**

A) Chemical properties

B) Physical properties

C) Both of these

D) None of these

○ A     ○ B     ○ C     ○ D

2) **Which of following element has maximum number of isotopes?**

A) Xenon

B) Cesium

C) Nitrogen

D) Both A & B

○ A     ○ B     ○ C     ○ D

3) **The neutron to proton ratio for $^{16}_{8}O$ is:**
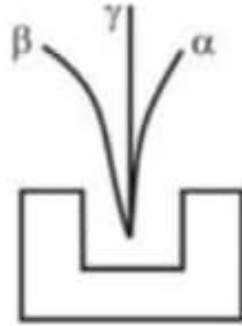
A) 2:1

B) 1:2

C) 1:1

D) 8:16

○ A     ○ B     ○ C     ○ D

**4)** In a radioactive phenomenon observation shown in figure where α deviates lesser than β in some electric or magnetic field (not shown in the figure). What is the reason of less deviation of α?



A) α is charged particle     C) α is neutral particle

B) α is heavier particle     D) α is lighter particle

○ A          ○ B          ○ C          ○ D

**5)** What is the charge number of an α-particle emitted during the phenomena of radioactivity?

A) –e                        C) –2e

B) +2e                       D) +2

○ A          ○ B          ○ C          ○ D

**6)** Which one is a container for storing radioactive substance?

A) Lead                      C) Cadmium

B) Iron                      D) Copper

○ A          ○ B          ○ C          ○ D

**7)** **Which of the following is true for γ-rays?**

|  | Charge | Rest mass |
|---|---|---|
| A) | Positive | $m_o c^2$ |
| B) | Negative | Zero |
| C) | Neutral | $m_o c^2$ |
| D) | Neutral | Zero |

○ A      ○ B      ○ C      ○ D

**8)** **γ-radiation are emitted due to:**

A) De-excitation of atom      C) De-excitation of nucleus

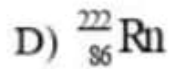B) Excitation of atom      D) Excitation of nucleus
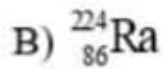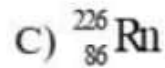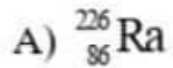
○ A      ○ B      ○ C      ○ D

**9)** **The phenomenon of radioactivity is associated with:**

A) Decay of nucleus

B) Fusion of nuclei

C) Transmission of radio waves

D) Nuclear reactions caused by cosmic rays

○ A      ○ B      ○ C      ○ D

**10)** After $\alpha$-emission from $^{226}_{88}Ra$, the daughter nucleus will be:

A) $^{226}_{86}Ra$

C) $^{226}_{86}Rn$

B) $^{224}_{86}Ra$

D) $^{222}_{86}Rn$

○ A      ○ B      ○ C      ○ D

**11)** After $\beta$-emission from neutron, which particle is found?

A) Proton

C) Neutron

B) Electron

D) Proton and electron

○ A      ○ B      ○ C      ○ D

**12)** An $\alpha$-emission is always accompanied by:

A) $\beta$-emission

C) Both "A" and "B"

B) $\gamma$-emission

D) Neutron emission

○ A      ○ B      ○ C      ○ D

**13)** The equation $_{z}X^{A} \longrightarrow _{z+1}Y^{A} +_{-1}e^{0} + \bar{\upsilon}$ represents:

A) β-decay

C) γ-decay

B) α–decay

D) Proton decay

○ A      ○ B      ○ C      ○ D

**14)** In an α-decay:

    A) The parent and daughter nuclei have same number of protons

    B) The daughter nucleus has one proton more than parent nucleus

    C) The daughter nucleus has two protons less than parent nucleus

    D) The daughter nucleus has two neutrons more than parent nucleus

  ○ A     ○ B     ○ C     ○ D

**15)** When a radioactive nucleus emits an α-particle, the N/Z ratio?

    A) Increases        C) Remains same

    B) Decreases       D) Any of these

  ○ A     ○ B     ○ C     ○ D

**16)** When a radioactive nucleus emits a β-particle, the mass number of the atom?

    A) Increases by one      C) Remains the same

    B) Decreases by one     D) Decreases by four

  ○ A     ○ B     ○ C     ○ D

**17)** The decay constant $\lambda$ of a radioactive sample:

A) Decreases as the age of atoms increases

B) Increases as the age of atoms increases

C) Is independent of the age

D) Depends on the nature of activity

○ A          ○ B          ○ C          ○ D

**18)** Half life of a radioactive substance depends upon:

A) Temperature                    C) Nature of substance

B) Pressure                       D) Electric & magnetic field

○ A          ○ B          ○ C          ○ D

**19)** The half life of radium is about 1600 years. If 100 g radium existing now, 25 g will remain un-decayed after:

A) 4800 years                     C) 1600 years

B) 6400 years                     D) 3200 years

○ A          ○ B          ○ C          ○ D

**20)** Half-life of radium is 1600 years. In how many years shall the earth lose all its radium due to radioactive decay?

A) 1590 x $10^6$ years             C) 1590 x $10^{24}$ years

B) 1590 x $10^{12}$ years          D) Never

○ A          ○ B          ○ C          ○ D

**21)** The half-life of a certain element is 7 days at S.T.P. If the temperature is doubled and pressure is reduced to half then half-life of the same element will be:

A) 1.75 days

C) 3.5 days

B) 7 days

D) 14 days

○ A          ○ B          ○ C          ○ D

**22)** Which of the following rays are more energetic?

A) $\alpha-rays$

C) $\beta-rays$

B) $\gamma-rays$

D) All of these

○ A          ○ B          ○ C          ○ D

**23)** Due to emission of $\beta^+$-rays:

A) Mass of the Nucleus Increases

B) Mass of the Nucleus Decreases

C) Charge on the Nucleus Increases

D) Charge on the Nucleus Decreases

○ A          ○ B          ○ C          ○ D

**24)** The Uranium Nucleus $^{238}_{92}U$ undergoes successive decays, emitting respectively $\alpha-particle$, $\beta-particle$ and $\gamma-ray$. What is the atomic number and atomic mass of the resulting nucleus?

A) 90 ,238

C) 91, 234

B) 92,236

D) 92,238

○ A      ○ B      ○ C      ○ D

**25)** A nucleus $^{210}_{81}X$ decays to another nucleus $^{A}_{82}Y$ in four successive radioactive decays. Each decay involves, the emission of either an $\alpha-decay$ or $\beta-decay$. What is the value of A?

A) 210

C) 208

B) 206

D) 204

○ A      ○ B      ○ C      ○ D

**26)** A Radioactive Isotope $^{238}_{92}U$ decays to $^{234}_{92}U$ the particles emitted are:

A) One $\alpha$ and one $\beta$

C) Two $\alpha$ and one $\beta$

B) One $\alpha$ and two $\beta$

D) Two $\alpha$ and two $\beta$

○ A      ○ B      ○ C      ○ D

**27)** Which one of the following radiation possesses maximum penetrating power?

A) α-rays

B) γ-rays

C) β-rays

D) All have equal penetrating power

○ A          ○ B          ○ C          ○ D

**28)** After α-decay, the parent and daughter nuclei are called:

A) Isomers                  C) Isobars

B) Isotones                 D) Isodiapheres

○ A          ○ B          ○ C          ○ D

**29)** The emission of β-particle results in:

A) Isomers                  C) Isobars

B) Isotones                 D) Isodiapheres

○ A          ○ B          ○ C          ○ D

**30)** Which one is not true about radioactivity?

A) Radioactivity is a stochastic process

B) Half-life only depends on nature of element

C) Decay rate decreases exponentially with time

D) None of these

○ A          ○ B          ○ C          ○ D

**31)** The number of atoms decayed in four half-lives are:

A) $\dfrac{N_o}{16}$

C) $\dfrac{N_o}{8}$

B) $\dfrac{7N_o}{8}$

D) $\dfrac{15N_o}{16}$

○ A     ○ B     ○ C     ○ D

**32)** If the half-life of an element is 10 second, the mean life will be:

A) 14.4 sec

C) 9.93 sec

B) 10 sec

D) Can't be predicted

○ A     ○ B     ○ C     ○ D

**33)** Half-life of a radioactive substance is how much percent of its mean life?

A) 35%                      C) 50%

B) 70%                      D) 85%

○ A     ○ B     ○ C     ○ D

**34)** The half-life period of a radioactive nuclide is 3 hours. In 9 hours, its activity will be reduced by a factor of:

A) 1/27                   C) 1/8

B) 1/6                    D) 1/9

○ A     ○ B     ○ C     ○ D

**34)** The half-life period of a radioactive nuclide is 3 hours. In 9 hours, its activity will be reduced by a factor of:

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B) 1/6　　　　　　　　　　　　 D) 1/9

○ A　　　　○ B　　　　○ C　　　　○ D

**35)** The half-life of radium is 1600 years. What fraction of a sample of radium will be disintegrated after 6400 years?

A) 7/8　　　　　　　　　　　　C) 15/16

B) 1/16　　　　　　　　　　　 D) 1/8

○ A　　　　○ B　　　　○ C　　　　○ D