Exercise MCQs

Sr. No.	Questions	A	В	C	D
1	Isotopes are atoms of same element with different	√atomic mass	atomic number	number of protons	number of electrons
2	One of the isotopes of uranium is $^{238}_{92}\mathrm{U}$. The number of neutrons in this isotope is	92	√ 146	238	330
3	Which among the following radiations has more penetrating power?	a beta particle	√a gamma ray	an alpha particle	all have the same penetrating ability
4	What happens to the atomic number of an element which emits one alpha particle?	increases by 1	stays the same	√decreases by 2	decreases b
5	The half-life of a certain isotope is 1 day. What is the quantity of the isotope after 2 days?	one-half	✓ one-quarter	one-eighth	none of the
6	When Uranium (92 protons) ejects a beta particle, how many protons will be in the remaining nucleus?	89 protons	90 protons	91 protons	√93 protor
7	Release of energy by the Sun is due to	nuclear fission	✓ nuclear fusion	burning of gases	chemical reaction
8	When a heavy nucleus splits into two lighter nuclei, the process would	√release nuclear energy	absorb nuclear energy	release chemical energy	absorb chemical energy
9	The reason carbon-dating works is that	plants and animals are such strong emitters of carbon-14	✓ after a plant or animal dies, it stops taking in fresh carbon-14	there is so much non- radioactive carbon dioxide in the	When plant or animals die. they absorb fres carbon -14

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Page 1 of 3

Additional MCQs

Proton heavier than electron Atomic mass number can be found by relation The temperature of sun is The number of neutrons in tritium (³ ₁ H) is The number of neutrons in deuterium (² ₁ H) is The number of neutrons in rotium (¹ ₁ H) is The number of neutrons in deuterium (² ₁ H) is The number of neutrons in rotium (¹ ₁ H) is The number of neutrons in deuterium (² ₁ H) is The number of neutrons in rotium (¹ ₁ H) is The number of neutrons in rotium (¹ ₁ H) is The number of neutrons in rotium (¹ ₁ H) is The number of neutrons in rotium (¹ ₁ H) is The number of neutrons in rotium (¹ ₁ H) is The number of neutrons in rotium (¹ ₂ H) is The nu						
Atomic mass number can be found by relation X - A		Questions	A	B	C	D
2	1	Proton heavier than electron	1636 times	1736 times	✓1836 times	1936 times
The temperature of sun is 20 kilo Kelvin Kelvin Kelvin 30 kilo Kelvin tritium (\frac{3}{4}\) is 1 \(\sim 2 \) 3 0 0	2		Z - A	A + N	✓Z + N	Z + A
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	3	The temperature of sun is	20 kilo Kelvin			30 kilo Kelvin
The number of neutrons in protium (² ₁ H) is 1 2 3 √0	4		1	√2	3	0
protium (¹H) is 1 2 3 √0 √0 n α decay decrease in atomic 2, 1 √2, 4 2, 2 Constant safe limit of radiation exposure 3 rem 4 rem √5 rem 6 rem Patient should be exposed to X-rays with limit Half life of hydrogen ⁰H is 12 years √12.3 years 30 years 30.3 years Half life of cobalt ¹½Co is 12 years √12.3 years √30 years 30.3 years Half life of carbon ¹½C is 3750 years 5370 years √5730 years 7530 years Half life of lead ¹½∃D is 8.07 hours 9.08 hours √10.6 hours 16.9 hours Half life of polonium ¹⁴Po is 12 years 12.3 years 130 years √4.51 × 10° Half life of uranium ²¾D is √7.1 × 10° years years years years Half life of polonium ²¾D is √7.1 × 10° years years years years years Half life of plutonium ²¾D is √7.1 × 10° years	5	The number of neutrons in	√ 1	2	3	0
Number	6		1	2	3	9 √0
S per year 3 rem 4 rem 5 rem 6 rem Patient should be exposed to X-rays with limit 1 to 2 rem 0.1 to 1.0 rem Half life of hydrogen	7	•	2, 1	√ 2,4	2,2	Constant
with limit 0 to 1.0 rem 1 to 2 rem 0.1 to 1.0 rem 0.2 to 2.0 rem 10	8	•	3 rem	4 rem	5 rem	6 rem
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	9	·	0 to 1.0 rem	1 to 2 rem	√ 0.1 to 1.0 rem	0.2 to 2.0 rem
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	10	Half life of hydrogen ${}^1_0 ext{H}$ is	12 years	✓12.3 years	30 years	30.3 years
14Half life of iodine $\frac{131}{53}$ I is $\checkmark 8.07$ days 9.08 days 10.6 days 16.9 days15Half life of lead $\frac{212}{52}$ Pb is 8.07 hours 9.08 hours $\checkmark 10.6$ hours 16.9 hours16Half life of polonium $\frac{194}{4}$ Po is 0.1 sec 0.3 sec 0.5 sec $\checkmark 0.7$ sec17Half life of polonium $\frac{210}{24}$ Po is 12 years 12.3 years 130 years $\checkmark 138$ years18Half life of uranium $\frac{235}{92}$ U is 7.1×10^8 3.0×10^8 4.51×10^9 3.5×10^9 19Half life of uranium $\frac{236}{92}$ U is 7.1×10^8 3.79×10^5 $\checkmark 4.51 \times 10^9$ 3.5×10^6 20Half life of plutonium $\frac{23}{94}$ Pu is 7.1×10^8 7.1×10^8 7.1×10^8 7.1×10^8 7.1×10^9 $7.1 \times$	11	Half life of cobalt $^{14}_{\ 6}$ Co is	12 years	12.3 years	✓30 years	30.3 years
15Half life of lead $^{212}{12}$ Pb is8.07 hours9.08 hours $\checkmark 10.6$ hours16.9 hours16Half life of polonium $^{194}{194}$ Po is0.1 sec0.3 sec0.5 sec $\checkmark 0.7$ sec17Half life of polonium $^{210}{194}$ Po is12 years12.3 years130 years $\checkmark 138$ years18Half life of uranium $^{235}{92}$ U is 7.1×10^8 years 3.0×10^8 years 4.51×10^9 years 3.5×10^9 years19Half life of uranium $^{236}{92}$ U is 7.1×10^8 years 3.79×10^5 years $\checkmark 4.51 \times 10^9$ years 3.5×10^6 years20Half life of plutonium $^{236}{94}$ Pu is 0.85 years $\checkmark 3.79 \times 10^5$ years 4.51×10^9 years 3.5×10^6 years21Half life of plutonium $^{236}{94}$ Pu is 0.85 years 1.85 years $\checkmark 2.85$ years 3.5×10^6 years22Beta particle is actuallyNeutrons $Positrons$ $\checkmark 1.85$ years $\checkmark 2.85$ years 3.5×10^6 years23Alpha particles areNeutrons $\checkmark 1.85$ years $\checkmark 1.85$ years $\checkmark 1.85$ years $\checkmark 1.85$ years $\checkmark 1.85$ years24During fission of 1 kg of uranium $^{235}{94}$ U energy is released 3.6×10^{10} J OR 3.6×10^9 J OR 3.6×10^{10} J OR	13	Half life of carbon ${}^{14}_{6}\mathrm{C}$ is	3750 years	5370 years	✓ 5730 years	7530 years
16Half life of polonium $^{194}{94}$ Po is 0.1 sec 0.3 sec 0.5 sec $\checkmark 0.7 \text{ sec}$ 17Half life of polonium $^{210}{94}$ Po is 12 years 12.3 years 130 years $\checkmark 138 \text{ years}$ 18Half life of uranium $^{235}{92}$ U is $\checkmark 7.1 \times 10^8$ years 3.0×10^8 years 4.51×10^9 years19Half life of uranium $^{236}{92}$ U is 7.1×10^8 years 3.79×10^5 years $\checkmark 4.51 \times 10^9$ years20Half life of plutonium $^{236}{94}$ Pu is 7.1×10^8 years $\checkmark 3.79 \times 10^5$ years 4.51×10^9 years21Half life of plutonium $^{236}{94}$ Pu is 0.85 years $\checkmark 3.79 \times 10^5$ years $\checkmark 4.51 \times 10^9$ years22Beta particle is actuallyNeutronsPositrons $\checkmark 2.85 \text{ years}$ 3.5×10^6 years23Alpha particles areNeutrons $\checkmark 10^{10} \text{ J}$ $65 \times 10^8 \text{ J}$ $67 \times 10^{11} \text{ J}$ 24During fission of 1 kg of uranium $^{235}{92}$ U energy is released $\checkmark 67 \times 10^{11} \text{ J}$ $65 \times 10^8 \text{ J}$ $67 \times 10^{11} \text{ J}$ 25To burn 1 tone of coalenergy is released $36 \times 10^{11} \text{ J}$ $2.6 \times 10^{11} \text{ J}$ $3.6 \times 10^{19} \text{ J}$ 26Number of neutrons during emission of fission reaction are 2×3 4×5 $5 \times 10^8 \text{ J}$ 27To diagnose a brain tumor, it is used $1 - 131$ $\checkmark Phosph32$ $Co - 60$ $C - 14$ 28The rays used during brain radiotherapy $4 \times 10^{10} \text{ J}$ $4 \times 10^{10} \text{ J}$ $4 \times 10^{10} \text{ J}$ 29 4×10^{10}	14	Half life of iodine ¹³¹ ₅₃ I is	√8.07 days	9.08 days	10.6 days	16.9 days
$ \begin{array}{c} 17 \\ \text{Half life of polonium} & 210 \\ 18 \\ \text{Half life of uranium} & 235 \\ 19 \\ \text{Half life of uranium} & 236 \\ 19 \\ \text{Half life of plutonium} & 236 \\ 19 \\ \text{Half life of plutonium} & 7.1 \times 10^8 \\ \text{years} & \text{years} & \text{years} & \text{years} \\ \text{years} & \text{years} & \text{years} & ye$	15	Half life of lead ²¹² ₈₂ Pb is	8.07 hours	9.08 hours	✓10.6 hours	16.9 hours
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	16	Half life of polonium ¹⁹⁴ ₈₄ Po is	0.1 sec	0.3 sec	0.5 sec	✓ 0.7 sec
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	17	Half life of polonium ²¹⁰ ₈₄ Po is	12 years	12.3 years	130 years	✓138 years
19Half life of uranium $^{236}_{92}$ U is 7.1×10^8 years 3.79×10^5 years $\sqrt{4.51 \times 10^9}$ years 3.5×10^6 	18	Half life of uranium ²³⁵ ₉₂ U is				
Half life of plutonium 2 3 Pu is 2 years 2 3.5 × 10 ⁶ years 2 years 2 years 2 3.5 years 2 2.85 years 2 3.5 years 2 2.85 years 2 3.5 years 2 2.86 years 2 3.5 years 2 2.87 years 2 3.5 years 2 3.6 years 2 3.5 years 2 3.6 years 2 3.7 years 2 3.8 years 2 3.9 years 2 3.8 year	19	Half life of uranium ²³⁶ ₉₂ U is				
21Half life of plutonium $^{236}_{94}$ Pu is0.85 years1.85 years \checkmark 2.85 years3.5 years22Beta particle is actuallyNeutronsPositrons \checkmark ElectronProton23Alpha particles areNeutrons \checkmark HeliumElectronProton24During fission of 1 kg of uranium $^{235}_{29}$ U energy is released \checkmark 67 \times 10 10 J OR $^{65}_{6.7} \times 10^{11}$ J OR $^{36}_{6.7} \times 10^{11}$ J OR $^{36}_{1.7} \times 10^{11}$ J $^{36}_{$	20	Half life of plutonium $^{2}_{\ 94}^{42}$ Pu is	7.1×10^{8}	\checkmark 3.79 × 10 ⁵	4.51×10^9	3.5×10^{6}
22Beta particle is actuallyNeutronsPositrons \checkmark ElectronProton23Alpha particles areNeutrons \checkmark HeliumElectronProton24During fission of 1 kg uranium $^{235}_{92}$ U energy is releasedof OR 6.7×10^{10} J OR 6.7×10^{11} J 65×10^8 J 65×10^8 J 67×10^{11} J OR $6.7 \times $	21	Half life of plutonium ²³⁶ Pu is	· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·	•
Alpha particles are Neutrons Neutrons Helium Electron Proton Proton Proton Alpha particles are Neutrons From $\frac{1}{1}$ to During fission of 1 kg of uranium $\frac{235}{92}$ U energy is released To burn 1 tone of coalenergy is released Number of neutrons during emission of fission reaction are Number of neutrons during emission of fission reaction are To diagnose a brain tumor, it is used The rays used during brain radiotherapy $\frac{1}{1}$ to $\frac{1}{1}$ t	22		•	Positrons	•	•
During fission of 1 kg of uranium $^{235}_{92}$ U energy is released To burn 1 tone of coalenergy is released To burn 1 tone of coalenergy is released Number of neutrons during emission of fission reaction are To diagnose a brain tumor, it is used I - 131 The rays used during brain radiotherapy $\alpha - rays$ passing through a gas produce $\alpha - rays$ produce $\alpha - rays$ possing through a gas produce $\alpha - rays$ produce	23		Neutrons	✓ Helium	Electron	Proton
To burn 1 tone of coalenergy is released	24		OR	65 × 10 ⁸ J	65 × 10 ⁸ J	$67 \times 10^{11} \text{ J}$
of fission reaction are $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	25			$2.6 \times 10^{11} \mathrm{J}$	OR	$2.6 \times 10^{10} \mathrm{J}$
The rays used during brain radiotherapy $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	26	_	2	√3		5
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	27	To diagnose a brain tumor, it is used	I – 131	✓Phosph. –32	Co - 60	C — 14
produce Evaporation Vionization Excitation All of these	28	,	α – rays	β – rays	√γ – rays	X – rays
The half-life of radium-226 is 4000 years 2000 years $\sqrt{1620 \text{ years}}$ 5730 years	29		Evaporation	✓Ionization	Excitation	All of these
	30	The half-life of radium-226 is	4000 years	2000 years	✓1620 years	5730 years

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31	Electron volt is also a unit of energy used in atomic and nearly physics 1eV = ?	$1.6 \times 10^{19} \text{J}$	\checkmark 1.6 × 10 ⁻¹⁹ J	$1.6 \times 10^{18} \text{ J}$	$1.6 \times 10^{-18} \mathrm{J}$
32	Which of the following option is the	Alpha	✓Beta	Gemma	Positive ions
	stream of high energy electrons?	particles	radiations	radiations	_
33	SI unit of radioactivity is	Rem	✓Bq	Bit	J
34	The process by which electron are emitted by hot metal surface is known	Conduction	Thermionic emission√	Evaporation	boiling
35	Isotope of iodine-131 is used in treatment of	Blood cancer	Bone cancer	Lungs cancer	Thyroid cancer
36	One of the isotope uranium $^{238}_{92}$ U. The number of neutrons in this isotope	92	146	238	330

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Page 3 of 3