

Nuclear Engineering Job Interview Questions And Answers



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Nuclear Engineering Interview Questions And Answers Guide.

Question - 1:

Neutrons have mass approximately equal to that of _____ atoms.

- A. hydrogen
- B. helium
- C. deuterium
- D. none of these

Ans:

Option A

[View All Answers](#)

Question - 2:

Pick out the wrong statement.

- A. The ratio of the density of the 'nucleus' to that of the 'atom' is 1012 .
- B. a-particle is identical with a doubly charged helium ion.
- C. The mass of deuterium atom is half that of helium atom.
- D. Gamma rays are high energy electrons.

Ans:

Option D

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Question - 3:

The disintegration rate of a radioactive element

- A. progressively increases.
- B. progressively decreases.
- C. remains constant throughout.
- D. may increase or decrease depending on the material.

Ans:

Option B

[View All Answers](#)

Question - 4:

Heavy water used in the nuclear reactors to slow down the speed of neutrons is

- A. highly purified water.
- B. a compound of oxygen and deuterium.
- C. water having dissolved salts of heavy metals.
- D. none of these.

Ans:

Option B

[View All Answers](#)

Question - 5:

Pressure of CO₂ gas (which is a coolant) in the Calder-Hall nuclear reactor is _____ kgf/cm² .

- A. 0.2
- B. 7
- C. 35
- D. 50

Ans:

Option B

[View All Answers](#)

**Question - 6:**

The electric power generation cost in nuclear power plant is less than that in a coal based thermal power plant, mainly because the

- A. fuel cost per unit power generated is less.
- B. thermal efficiency of the former is higher.
- C. maintenance cost of the former is less.
- D. none of these.

Ans:

Option A

[View All Answers](#)

Question - 7:

Pick out the wrong statement.

- A. Atoms with same number of nucleons but different number of protons are called isobars.
- B. Atoms with same number of protons but different number of nucleons are called isoters.
- C. Out of α , β , and γ -rays, the one having maximum penetration power are γ -rays.
- D. The product formed by emission of α -particle has mass number less by 4 units than the parent nuclide.

Ans:

Option B

[View All Answers](#)

Question - 8:

Molten sodium is used as a coolant in a fast breeder reactor, because of its

- A. excellent moderating properties.
- B. neutron breeding capability.
- C. faster heat removal capability from the core.
- D. capability to increase the reaction rate in the core.

Ans:

Option C

[View All Answers](#)

Question - 9:

Which of the following is the most harmful for the human being?

- A. β -rays
- B. X-rays
- C. γ -rays
- D. ultra violet rays

Ans:

Option C

[View All Answers](#)

Question - 10:

Coolant used in a fast breeder reactor is

- A. molten sodium
- B. heavy water
- C. ordinary water
- D. helium

Ans:

Option A

[View All Answers](#)

Question - 11:

An element having large number of _____ is most easily subjected to nuclear fission.

- A. protons
- B. electrons
- C. neutrons
- D. nucleons

Ans:

Option D

[View All Answers](#)

Question - 12:

Heavy water is preferred over ordinary water as a coolant, because it.

- A. acts both as an efficient coolant as well as a moderator.
- B. can be heated to a higher temperature without pressurizing.
- C. is less prone to radiation damage.
- D. all (a), (b) and (c).

Ans:



Option D

[View All Answers](#)

Question - 13:

The ratio of mass of a neutron to that of an electron is about 1839. What is the ratio of the mass of a proton to that of an electron?

- A. 159
- B. 1837
- C. 2537
- D. 10000

Ans:

Option B

[View All Answers](#)

Question - 14:

The number of neutrons in the nucleus of Uranium-233 (${}^{92}\text{U}233$) is

- A. 141
- B. 92
- C. 233
- D. 325

Ans:

Option A

[View All Answers](#)

Question - 15:

Which of the following gases has very high neutron capture cross-section, making it unsuitable as a coolant in nuclear reactor?

- A. N_2
- B. He
- C. CO_2
- D. H_2

Ans:

Option A

[View All Answers](#)

Question - 16:

Nuclear power reactor located at Tarapur is of _____ type.

- A. fast breeder
- B. pressurised water
- C. boiling water
- D. gas cooled

Ans:

Option C

[View All Answers](#)

Question - 17:

Which of the following is not an ore of uranium?

- A. Pitchblende
- B. Kyanite
- C. Carnotite
- D. Rescolite

Ans:

Option B

[View All Answers](#)

Question - 18:

The main purpose of control rod in a nuclear reactor is to control the

- A. chain reaction and hence the power output by regulating the number of secondary neutrons causing fission.
- B. emission of hazardous radiation.
- C. conversion of fissile material into fertile material.
- D. velocity of the secondary neutrons.

Ans:

Option A

[View All Answers](#)

Question - 19:

Secondary cooling circuit is a must in molten sodium cooled fast breeder reactor for

- A. achieving high degree of superheat in the steam.
- B. faster heat removal rate from the core.



- C. lowering the coolant circulation pressure.
- D. avoiding the mixing of water with radioactive sodium, as it may cause explosion.

Ans:

Option D

[View All Answers](#)

Question - 20:

What is the average life of a radioactive atom having a 'half life period' of T?

- A. 1.44 T
- B. 0.144 T
- C. 14.4 T
- D. 2T

Ans:

Option A

[View All Answers](#)

Question - 21:

Use of molten metal as a coolant in fast breeder reactor helps in

- A. rapid heat transfer from the core.
- B. accelerating the reaction rate in the core.
- C. breeding neutrons.
- D. accelerating the neutrons.

Ans:

Option A

[View All Answers](#)

Question - 22:

Which of the following is a non-fissile material?

- A. Plutonium-239
- B. Uranium-235
- C. Uranium-233
- D. Thorium-232

Ans:

Option D

[View All Answers](#)

Question - 23:

Candu reactor is a _____ nuclear reactor.

- A. natural uranium fuelled heavy water cooled & moderated
- B. highly enriched uranium (85% U-235) fuelled
- C. homogeneous
- D. fast breeder

Ans:

Option A

[View All Answers](#)

Question - 24:

Percentage of natural uranium present in uranium ore found in Jadugoda (Jharkhand) is

- A. 0.1
- B. 1
- C. 3
- D. 12

Ans:

Option A

[View All Answers](#)

Question - 25:

Nucleus of tritium has _____ neutrons.

- A. 1
- B. 2
- C. 3
- D. 5

Ans:

Option B

[View All Answers](#)

Question - 26:



- Bhabha Atomic Research Centre (BARC) located at Trombay (near Bombay) has
- A. five operating research reactors (namely Apsara, Cirus Zerelina, Purnima and Dhurva).
 - B. a 420 MW nuclear power plant.
 - C. a very large capacity (100 tons/yr) heavy water plant.
 - D. all (a), (b) and (c).

Ans:

Option A

[View All Answers](#)

Question - 27:

U-235 content in enriched uranium, that is normally used in power reactors (e.g., at Tarapur atomic power plant), is about _____ percent.

- A. 85
- B. 50
- C. 3
- D. 97

Ans:

Option C

[View All Answers](#)

Question - 28:

- A fast breeder reactor
- A. utilises fast neutrons for causing fission.
 - B. converts fertile material (e.g., U-238) into fissile material (Pu-239).
 - C. normally employs molten sodium as coolant.
 - D. all (a), (b) and (c).

Ans:

Option D

[View All Answers](#)

Question - 29:

H₂ is a better coolant than CO₂, due to its relatively

- A. lower density.
- B. higher specific heat.
- C. non-reactivity to uranium.
- D. lower neutron capture cross-section.

Ans:

Option B

[View All Answers](#)

Question - 30:

The half life period of a radioactive element is 100 days. After 400 days, one gm of the element will be reduced to _____ gm.

- A. 1/4
- B. 1/8
- C. 1/2
- D. 1/16

Ans:

Option D

[View All Answers](#)

Question - 31:

First experimental observation of nuclear fission was done by

- A. Plane
- B. Rutherford
- C. Fermi
- D. Hahn and Strassman

Ans:

Option C

[View All Answers](#)

Question - 32:

Coolant present in the primary circuit of a pressurised water reactor is high pressure

- A. sub cooled water
- B. saturated water
- C. superheated steam
- D. saturated steam

Ans:

Option B



[View All Answers](#)

Question - 33:

Extraction of uranium from its ore is done using _____ methods.

- A. electrometallurgical
- B. pyrometallurgical
- C. chemical
- D. physical beneficiation

Ans:

Option C

[View All Answers](#)

Question - 34:

The emission of an α -particle causes the resultant nucleus to have

- A. more atomic weight and less atomic number.
- B. less atomic weight and less atomic number.
- C. less atomic weight and more atomic number.
- D. none of these.

Ans:

Option A

[View All Answers](#)

Question - 35:

'Light water' used as a coolant in nuclear reactor is nothing but

- A. ordinary water.
- B. mildly acidic (pH = 6) water.
- C. mildly alkaline (pH = 8) water.
- D. none of these.

Ans:

Option A

[View All Answers](#)

Question - 36:

Fast breeder reactors are most usable in India, because of our largest _____ deposits.

- A. thorium
- B. plutonium
- C. uranium
- D. none of these

Ans:

Option A

[View All Answers](#)

Question - 37:

The main ore of thorium is

- A. pitchblende
- B. monazite sand
- C. limonite
- D. galena

Ans:

Option B

[View All Answers](#)

Question - 38:

Critical energy should be _____ the neutron binding energy of the atom in order to initiate a nuclear fission.

- A. equal to
- B. less than
- C. more than
- D. either more or less==

Ans:

Option C

[View All Answers](#)

Question - 39:

In nuclear reactions, _____ number is conserved.

- A. mass
- B. atomic
- C. both (a) & (b)



D. neither (a) nor (b)

Ans:

Option C

[View All Answers](#)

Question - 40:

The ratio of neutrons to protons of an element having a mass number and atomic number of 80 and 40 respectively is

- A. 1
- B. 0.5
- C. 2
- D. 4

Ans:

Option A

[View All Answers](#)

Question - 41:

Function of control rod in a nuclear reactor is to control

- A. temperature
- B. pressure
- C. fuel consumption
- D. absorption of neutrons

Ans:

Option D

[View All Answers](#)

Question - 42:

The main ore of uranium is

- A. pitchblende
- B. monazite sand
- C. cassiterite
- D. chalcopyrite

Ans:

Option A

[View All Answers](#)

Question - 43:

Which of the following nuclear materials is fissile?

- A. Uranium-238
- B. Thorium-232
- C. Plutonium-239
- D. None of these

Ans:

Option C

[View All Answers](#)

Question - 44:

Solar energy results from _____ reaction.

- A. fission
- B. combustion
- C. thermonuclear
- D. none of these

Ans:

Option C

[View All Answers](#)

Question - 45:

Heavy water (D₂O) in a nuclear reactor serves as a

- A. coolant
- B. moderator
- C. both (a) & (b)
- D. neutron absorber

Ans:

Option C

[View All Answers](#)

Question - 46:



Atoms of U-238 and U-235 differ in structure by three

- A. electrons and three protons
- B. protons
- C. neutrons
- D. electrons

Ans:

Option C

[View All Answers](#)

Question - 47:

A radioactive isotope undergoes decay with respect to time following _____ law.

- A. logarithmic
- B. exponential
- C. linear
- D. inverse square

Ans:

Option B

[View All Answers](#)

Question - 48:

Main source of _____ is monazite sand.

- A. uranium
- B. polonium
- C. hafnium
- D. thorium

Ans:

Option D

[View All Answers](#)

Question - 49:

The first underground nuclear test was conducted by India at

- A. Jaisalmer
- B. Pokharan
- C. Kalpakkam
- D. Narora

Ans:

Option B

[View All Answers](#)

Question - 50:

Which of the following is not a good moderating material?

- A. Concrete
- B. Boron
- C. 18/8 stainless steel
- D. All (a), (b) and (c)

Ans:

Option D

[View All Answers](#)

Question - 51:

The molecular weight of heavy water is

- A. 10
- B. 18
- C. 20
- D. 36

Ans:

Option C

[View All Answers](#)

Question - 52:

The size of an atom is of the order of one

- A. Angstrom
- B. fermi
- C. micron
- D. mm

Ans:

Option A



[View All Answers](#)

Question - 53:

An ideal coolant for a nuclear reactor should

- A. be a good absorber of neutrons.
- B. be capable of attaining high temperature, only when it is pressurised.
- C. have high density, but low heat transfer co-efficient.
- D. be free from radiation damage and non-corrosive.

Ans:

Option D

[View All Answers](#)

Question - 54:

The phenomenon of nuclear fission is opposite to that of

- A. radioactive decay
- B. thermionic emission
- C. nuclear fusion
- D. combustion

Ans:

Option C

[View All Answers](#)

Question - 55:

A thermal nuclear reactor compared to a fast breeder reactor

- A. uses slower neutrons for fission.
- B. uses faster neutrons for fission.
- C. gives higher power density.
- D. requires less fuel to run at the same power level.

Ans:

Option A

[View All Answers](#)

Question - 56:

Coolant used in a boiling water reactor is

- A. hydrogen gas
- B. water
- C. steam
- D. a mixture of water & steam

Ans:

Option D

[View All Answers](#)

Question - 57:

Liquid metal (e.g. , molten sodium) is preferred as a coolant in case of a/an _____ reactor.

- A. homogeneous
- B. graphite moderated
- C. fast breeder
- D. enriched uranium (3% U-235) fuelled

Ans:

Option C

[View All Answers](#)

Question - 58:

In a pressurised water reactor (PWR), the

- A. fuel is natural uranium and heavy water acts both as moderator & coolant.
- B. coolant water boils in the core of the reactor.
- C. coolant water is pressurised to prevent bulk boiling of water in the core.
- D. use of moderator is not required.

Ans:

Option C

[View All Answers](#)

Question - 59:

Which of the following accounts for the maximum energy release in the nuclear fission process?

- A. Kinetic energy of fission products
- B. Radioactive decay of fission products
- C. Instantaneous release of Y-rays



D. Kinetic energy of neutrons

Ans:

Option A

[View All Answers](#)

Question - 60:

Which of the following nuclear reactors is the most efficient thermodynamically while operating between the same temperature and pressure limits of the reactor?

- A. Molten sodium cooled
- B. CO₂ gas cooled
- C. Pressurised water
- D. Boiling water

Ans:

Option D

[View All Answers](#)

Question - 61:

75% of a radioactive element decays in 6 hours. Its half life period is _____ hours.

- A. 3/4
- B. 1/6
- C. 3
- D. 4

Ans:

Option C

[View All Answers](#)

Question - 62:

The phenomenon of radioactivity was discovered by

- A. Madam Curie
- B. Bacquerrel
- C. Roentgen
- D. J.J. Thomson

Ans:

Option B

[View All Answers](#)

Question - 63:

Out of the following places, heavy water plant is not located at

- A. Baroda
- B. Ramagundam
- C. Talcher
- D. Tuticorin

Ans:

Option B

[View All Answers](#)

Question - 64:

A pressurised water reactor (PWR) uses pressurised water as a

- A. coolant.
- B. working fluid in power turbine.
- C. moderator.
- D. none of these.

Ans:

Option A

[View All Answers](#)

Question - 65:

Pick out the correct statement.

- A. Positron is the antiparticle of electron.
- B. In α -decay, the ratio of neutron to proton decreases.
- C. Ionising power of β -rays is higher than that of α -rays.
- D. Speed of α -rays is more than that of γ -rays.

Ans:

Option A

[View All Answers](#)

Question - 66:



Which of the following is the best nuclear fuel?

- A. Np- 239
- B. U-234
- C. Pu-239
- D. Th-236

Ans:

Option C

[View All Answers](#)

Question - 67:

Uranium is recovered from its ore (pitchblende) by

- A. froth floatation technique.
- B. leaching with sulphuric acid.
- C. smelting in a furnace.
- D. dissolving in water.

Ans:

Option B

[View All Answers](#)

Question - 68:

Positron is a/an

- A. nucleus having two protons.
- B. helium nucleus.
- C. electron with positive charge.
- D. nucleus with one proton and one neutron.

Ans:

Option C

[View All Answers](#)

Question - 69:

Which of the following is a fuel for a fusion reactor (thermonuclear reactor)?

- A. Deuterium and tritium
- B. U-233
- C. Thorium
- D. Heavy water

Ans:

Option A

[View All Answers](#)

Question - 70:

Heavy water is used as a moderator in a

- A. pressurised water reactor (PWR).
- B. boiling water reactor (BWR).
- C. Candu reactor.
- D. molten sodium cooled reactor.

Ans:

Option C

[View All Answers](#)

Question - 71:

Nuclear power plant is not located at

- A. Talcher (Orissa)
- B. Rawatbhata (Rajasthan)
- C. Kalpakkam (Tamilnadu)
- D. Kaiga (Karnataka)

Ans:

Option A

[View All Answers](#)

Question - 72:

Isotopes of an element have the same

- A. number of neutrons
- B. mass number
- C. electronic configuration
- D. atomic weight

Ans:

Option C



[View All Answers](#)

Question - 73:

Extraction of uranium from its ore is done by _____ method.

- A. chemical
- B. pyrometallurgical
- C. physical beneficiation
- D. electrometallurgical

Ans:

Option A

[View All Answers](#)

Question - 74:

Radioactivity of an isotope is expressed in

- A. barn
- B. MeV
- C. Curie
- D. Ergs=

Ans:

Option C

[View All Answers](#)

Question - 75:

A heterogeneous reactor is the one, in which the moderator and the

- A. coolant are different materials.
- B. coolant are present in different phases (e.g., heavy water and graphite).
- C. fuel are present in different phases (e.g. uranium and heavy water).
- D. none of these.

Ans:

Option C

[View All Answers](#)

Question - 76:

The atomic mass of an element is fractional, because

- A. of uncertainty principle.
- B. it may have isobars.
- C. it contains neutrons.
- D. it may have isotopes.

Ans:

Option D

[View All Answers](#)

Question - 77:

Net efficiency of ordinary light water cooled nuclear reactor is about _____ percent.

- A. 32
- B. 52
- C. 72
- D. 88

Ans:

Option A

[View All Answers](#)

Question - 78:

The sum of masses of two nuclei produced in nuclear fission compared to the mass of original nucleus is

- A. less
- B. more
- C. same
- D. much more

Ans:

Option A

[View All Answers](#)

Question - 79:

The new nucleus formed after β -decay of a radioactive element has

- A. less atomic number
- B. less atomic weight
- C. more atomic number



D. more atomic weight

Ans:

Option A

[View All Answers](#)

Question - 80:

When the difference between mass number and atomic number of atoms of two or more elements are same, the atoms are termed as

- A. isomers
- B. isotopes
- C. isobars
- D. isotones

Ans:

Option D

[View All Answers](#)

Question - 81:

'Heavy water' is termed as 'heavy' because it is

- A. denser than water.
- B. an oxide of deuterium.
- C. a heavy liquid.
- D. an oxide of heavier isotope of oxygen.

Ans:

Option B

[View All Answers](#)

Question - 82:

Uranium Corporation of India Limited (UCIL) engaged in the mining & concentration of uranium ore is located at

- A. Alwaye (in Kerala)
- B. Jadugoda (in Jharkhand)
- C. Kalpakkam (in Tamilnadu)
- D. Gopalpur coast (in Orissa)

Ans:

Option B

[View All Answers](#)

Question - 83:

_____ gas is normally not used as a coolant in a nuclear reactor, because of its high neutron capture cross-section.

- A. Nitrogen
- B. Hydrogen
- C. Helium
- D. Carbon dioxide

Ans:

Option A

[View All Answers](#)

Question - 84:

Pick out the correct statement.

- A. Loss of electrons from neutral atoms produces negative ions.
- B. The radius of nucleus & atomic size are of the order of 10-12 cm & 10-8 cm respectively.
- C. Gain of electrons by neutral atoms form cations.
- D. Proton to neutron ratio in a stable nucleus is 2 : 1.

Ans:

Option B

[View All Answers](#)

Question - 85:

Quantity of fissionable material (i.e. U-235) in natural uranium is _____ percent.

- A. 0.71
- B. 6.31
- C. 99.29
- D. 12.73

Ans:

Option A

[View All Answers](#)

Question - 86:



Which of the following is present in Bhabha Atomic Research Centre (BARC) complex, Trombay (Bombay)?

- A. Power reactor
- B. Research reactor
- C. Fast breeder reactor
- D. Heavy water plant

Ans:

Option B

[View All Answers](#)

Question - 87:

Which of the following isotopes is not present in natural uranium?

- A. U-238
- B. U-234
- C. U-235
- D. U-232

Ans:

Option D

[View All Answers](#)

Question - 88:

Which of the following is not used as a moderator in nuclear reactor?

- A. Molten sodium
- B. Light water
- C. Beryllium
- D. Boron hydride

Ans:

Option A

[View All Answers](#)

Question - 89:

Percentage of the heavy water in ordi water is around

- A. 0.015
- B. 7.54
- C. 0.71
- D. 32.97

Ans:

Option A

[View All Answers](#)

Question - 90:

Water is a better coolant than a gas (like CO₂, He, N₂ etc.), because it

- A. is a better neutron moderator as well.
- B. requires comparatively smaller pumps and heat exchanger for a given heat transfer rate.
- C. has a better heat transfer characteristics, and it can be pressurised to attain a high temperature.
- D. all (a), (b) and (c).

Ans:

Option D

[View All Answers](#)

Question - 91:

Pick out the wrong statement.

- A. The disintegration rate of a radioactive substance can not be increased by heating it.
- B. Electrons have negligible mass and unit negative charge.
- C. Deuterium atom has one proton and two neutrons in its nucleus.
- D. Cadmium is capable of absorbing neutrons.

Ans:

Option C

[View All Answers](#)

Question - 92:

Pressure in a Pressurised Water Reactor (PWR) is used for

- A. maintaining constant pressure in the primary cooling circuit under varying loads.
- B. superheating the steam.
- C. pressurising the water in the primary coolant circuit.
- D. none of these.

Ans:

Option A



[View All Answers](#)

Question - 93:

Energy produced in the nuclear fission is of the order of _____ MeV.

- A. 20
- B. 200
- C. 1000
- D. 2000

Ans:

Option B

[View All Answers](#)

Question - 94:

In β -decay of radioactive material, the ratio of neutron to proton

- A. increases.
- B. remains same.
- C. decreases.
- D. is unpredictable; may increase or decrease.

Ans:

Option C

[View All Answers](#)

Question - 95:

Nuclear fuel usually used in a Boiling Water Reactor (BWR) is

- A. plutonium
- B. enriched uranium
- C. natural uranium
- D. thorium

Ans:

Option B

[View All Answers](#)

Question - 96:

Which is not a fissile nuclear material?

- A. U-233
- B. U-235
- C. U-238
- D. Pu-239

Ans:

Option C

[View All Answers](#)

Question - 97:

Heavy water plant is not located at

- A. Talcher
- B. Tuticorin
- C. Ramagundam
- D. Kota

Ans:

Option C

[View All Answers](#)

Question - 98:

Primary purpose of a _____ nuclear reactor is to supply a high neutron flux of the order of 10^{13} to 10^{14} neutrons/cm² second.

- A. research
- B. power
- C. breeder
- D. homogeneous

Ans:

Option A

[View All Answers](#)

Question - 99:

The critical mass of a fissionable material can be reduced by

- A. heating it.
- B. cooling it.
- C. surrounding it by neutron reflecting material.



D. surrounding it by neutron absorbing material.

Ans:

Option C

[View All Answers](#)

Question - 100:

Thorium-232 (a fertile material) on absorption of a neutron gets converted into _____, which is a fissile material.

- A. thorium-233
- B. uranium-235
- C. uranium-233
- D. plutonium-239

Ans:

Option C

[View All Answers](#)

Question - 101:

Pick out the wrong statement.

- A. Isotopes have the same number of protons & electrons, but different number of neutrons.
- B. Hydrogen has two isotopes.
- C. In ordinary hydrogen, $1H1$ and $1H2$ are present in the ratio 6400:1.
- D. none of these.

Ans:

Option B

[View All Answers](#)

Question - 102:

Nucleus of $^{92}U^{235}$ contains _____ protons.

- A. 92
- B. 235
- C. 143
- D. 325

Ans:

Option A

[View All Answers](#)

Question - 103:

Safety rods provided in nuclear reactors to guard against accidents, in case of earthquake are made of

- A. high carbon steel.
- B. molybdenum.
- C. zircalloy.
- D. boron or cadmium.

Ans:

Option D

[View All Answers](#)

Question - 104:

Percentage of heavy water in ordinary water is around

- A. 0.015
- B. 7.54
- C. 0.71
- D. 32.97

Ans:

Option A

[View All Answers](#)

Question - 105:

Which of the following undergoes fission reaction easily?

- A. U-235
- B. U-238
- C. Th-232
- D. none of these

Ans:

Option A

[View All Answers](#)

Question - 106:



Pick out the wrong statement.

- A. α -particle emission from a radioactive element makes it electrically negative.
- B. β -particle emission from a radioactive element makes it electrically positive.
- C. A radioactive element having a half life period of 20 years will completely disintegrated in 40 years.
- D. The disintegration constant of a radioactive isotope is independent of pressure, temperature or concentration.

Ans:

Option C

[View All Answers](#)

Question - 107:

One 'amu' is equivalent to

- A. 9.31 Mev
- B. 931 eV
- C. 931 MeV
- D. 931 J

Ans:

Option C

[View All Answers](#)

Question - 108:

Unit of radioactivity is

- A. barn
- B. Fermi
- C. Angstrom
- D. Curie

Ans:

Option D

[View All Answers](#)

Question - 109:

The half life period of a radioactive element depends upon the

- A. temperature
- B. pressure
- C. amount of element present
- D. none of these

Ans:

Option D

[View All Answers](#)

Question - 110:

Indian monazite sand contains _____ percent thorium.

- A. 10
- B. 25
- C. 60
- D. 90

Ans:

Option A

[View All Answers](#)

Question - 111:

A radioactive substance does not emit

- A. α -ray
- B. proton
- C. positron
- D. β -ray

Ans:

Option B

[View All Answers](#)

Question - 112:

Out of the following, nucleus of _____ atom contains the largest number of neutrons.

- A. U-235
- B. U-238
- C. U-239
- D. Pu-239

Ans:

Option C



[View All Answers](#)

Question - 113:

β -rays emission in radioactive disintegration is always accompanied by the emission of

- A. γ -rays
- B. α -rays
- C. neutrons
- D. none of these

Ans:

Option A

[View All Answers](#)

Question - 114:

Heavy water plant is not located at

- A. Kota and Baroda
- B. Talcher (Orissa)
- C. Tuticorin(Tamilnadu)
- D. Korba

Ans:

Option D

[View All Answers](#)

Question - 115:

Nuclear power generation capacity in India is

- A. 3000 MW.
- B. 10000 MW.
- C. more than hydroelectric power generation capacity.
- D. more than thermal power generation capacity.

Ans:

Option A

[View All Answers](#)

Question - 116:

Both tritium and deuterium have the same number of

- A. neutrons
- B. electrons
- C. protons
- D. nucleons

Ans:

Option A

[View All Answers](#)

Question - 117:

Hydrogen differs from deuterium in _____ properties.

- A. radioactive
- B. physical
- C. chemical
- D. all (a), (b) and (c)

Ans:

Option B

[View All Answers](#)

Question - 118:

Which of the following radiations is the least penetrating?

- A. α -rays
- B. β -rays
- C. γ -rays
- D. X-rays

Ans:

Option A

[View All Answers](#)

Question - 119:

The radioisotope used to study the thyroid gland is

- A. iodine
- B. cobalt
- C. iron



D. carbon

Ans:

Option A

[View All Answers](#)

Question - 120:

Enriched uranium means that, it contains

- A. more than 0.71% of U-235.
- B. only fertile material.
- C. only fissile material.
- D. no impurities.

Ans:

Option A

[View All Answers](#)

Question - 121:

In a homogeneous nuclear reactor, the _____ are mixed together.

- A. fuel & coolant
- B. fuel & moderator
- C. coolant & moderator
- D. none of these

Ans:

Option B

[View All Answers](#)

Question - 122:

Artificially produced radioactive isotopes are used for

- A. power generation.
- B. treatment of certain diseases.
- C. initiating nuclear fission and fusion.
- D. all (a), (b) and (c).

Ans:

Option B

[View All Answers](#)

Question - 123:

Uranium percentage in monazite sand is about

- A. 0.01
- B. 0.25
- C. 1.2
- D. 7

Ans:

Option B

[View All Answers](#)

Question - 124:

Which of the following reactors is operated at high neutron flux and low power level?

- A. Breeder reactor.
- B. Research reactor.
- C. Heterogeneous reactor.
- D. Liquid metal (e.g., molten sodium) cooled reactor.

Ans:

Option B

[View All Answers](#)

Question - 125:

Uranium ore is mined & concentrated in India at

- A. Jadugoda(Jharkhand)
- B. Kota (Rajasthan)
- C. Tuticorin (Tamilnadu)
- D. Talchar (Orissa)

Ans:

Option A

[View All Answers](#)

Question - 126:



Ceramic nuclear metals compared to solid nuclear metals have

- A. higher melting points.
- B. low strength at high temperature.
- C. more chances of radiation damage.
- D. poorer corrosion resistance.

Ans:

Option A

[View All Answers](#)

Question - 127:

Heavy water has maximum density at _____ C.

- A. 4
- B. 11.6
- C. 0
- D. 18.6

Ans:

Option B

[View All Answers](#)

Question - 128:

A fast breeder reactor

- A. uses natural uranium as fuel.
- B. does not require a moderator.
- C. both (a) and (b).
- D. neither (a) nor (b).

Ans:

Option B

[View All Answers](#)

Question - 129:

Which of the following factors is the most important in the site selection for a nuclear power plant?

- A. Absence of earthquake prone zone in nearby areas.
- B. Abundant availability of water.
- C. Remotely located from residential areas.
- D. Proximity to fuel source.

Ans:

Option A

[View All Answers](#)

Question - 130:

Radioactive decay of a material involves a _____ order reaction.

- A. third
- B. second
- C. first
- D. zero

Ans:

Option C

[View All Answers](#)

Question - 131:

Nuclear reactors are provided with shield to guard against the emission of mainly _____ rays.

- A. X
- B. α and β
- C. neutrons & gamma
- D. infrared

Ans:

Option C

[View All Answers](#)

Question - 132:

Isotopes of an element have different

- A. mass number
- B. electronic configuration
- C. nuclear charge
- D. chemical properties

Ans:

Option A



[View All Answers](#)

Question - 133:

Biological shield is provided in a nuclear power reactor to protect the _____ from radiation damage.

- A. fuel elements
- B. operating personnels
- C. walls of the reactor
- D. none of these

Ans:

Option B

[View All Answers](#)

Question - 134:

Mass of a positron is same as that of a/an

- A. electron
- B. α -particle
- C. proton
- D. neutron

Ans:

Option A

[View All Answers](#)

Question - 135:

The mass number of an element is equal to the number of _____ in the nucleus.

- A. electrons
- B. neutrons
- C. protons
- D. neutrons plus protons (i.e., nucleons)

Ans:

Option D

[View All Answers](#)

Question - 136:

In the gaseous diffusion process of uranium enrichment, the natural uranium is converted into gaseous

- A. uranium oxide
- B. uranium hexafluoride
- C. uranium carbide
- D. uranium sulphate

Ans:

Option B

[View All Answers](#)

Question - 137:

Fast breeder test reactor at Kalpakkam is designed for using

- A. thorium as a fertile material.
- B. U-238 as a fertile material.
- C. helium as a coolant.
- D. uranium ore directly as a fuel.

Ans:

Option A

[View All Answers](#)

Question - 138:

Fuel for a fast breeder reactor is

- A. plutonium
- B. uranium
- C. radium
- D. neptunium

Ans:

Option A

[View All Answers](#)

Question - 139:

Number of secondary neutron emitted on fission of an atom of U-235 by slow neutron bombardment is

- A. 3
- B. 2.35
- C. 200



D. 92

Ans:

Option A

[View All Answers](#)

Question - 140:

A control rod

- A. should have small absorption cross-section.
- B. is generally made of boron, hafnium or cadmium.
- C. should have large absorption cross-section.
- D. both (b) and (c).

Ans:

Option D

[View All Answers](#)

Question - 141:

Plutonium

- A. is recovered from spent fuel from thermal nuclear reactor.
- B. has much lower melting point (640C) compared to thorium (1690C).
- C. both (a) and (b).
- D. neither (a) nor (b).

Ans:

Option C

[View All Answers](#)

Question - 142:

A fast breeder reactor employs

- A. graphite as moderator.
- B. water as coolant.
- C. molten sodium as coolant as well as moderator.
- D. U-235 as fuel.

Ans:

Option D

[View All Answers](#)

Question - 143:

Fuel for a nuclear reactor (thermal) is

- A. uranium
- B. plutonium
- C. radium
- D. none of these

Ans:

Option A

[View All Answers](#)

Question - 144:

Percentage of U-238 in natural uranium is around

- A. 0.71
- B. 99.29
- C. 0.015
- D. 29.71

Ans:

Option B

[View All Answers](#)

Question - 145:

Emission of β -particles during radioactive decay of a substance is from

- A. innermost shell
- B. nucleus
- C. outermost shell
- D. none of these

Ans:

Option B

[View All Answers](#)

Question - 146:



How many atoms are present in one gm-atom of an element?

- A. 2×10^{23}
- B. 6×10^{23}
- C. 6×10^{32}
- D. 5×10^5

Ans:

Option B

[View All Answers](#)

Question - 147:

Uranium ore is currently mined & concentrated at

- A. Jadugoda
- B. Ghatsila
- C. Khetri
- D. Alwaye

Ans:

Option A

[View All Answers](#)

Question - 148:

Which of the following ores contains maximum percentage of uranium?

- A. Carnotite
- B. Thorium.
- C. Rescolite
- D. Pitchblende

Ans:

Option D

[View All Answers](#)

Question - 149:

Atoms with same number of neutrons, but different number of nucleons are called

- A. isotones
- B. isobars
- C. isotopes
- D. isoters

Ans:

Option A

[View All Answers](#)

Question - 150:

Enrichment of uranium is done to increase the concentration of _____ in the natural uranium.

- A. U-238
- B. U-233
- C. U-235
- D. Pu-239

Ans:

Option C

[View All Answers](#)

Question - 151:

Thorium metal

- A. resembles steel in appearance.
- B. is less hard (in the range of silver).
- C. is highly ductile.
- D. all (a), (b) and (c).

Ans:

Option D

[View All Answers](#)

Question - 152:

Fast breeder nuclear reactors using enriched uranium as fuel may contain upto a maximum of _____ percent of U-235 (i.e. fissile material).

- A. 15
- B. 45
- C. 65
- D. 85

Ans:

Option D



[View All Answers](#)

Question - 153:

A fertile material is the one, which can be

- A. converted into fissile material on absorption of neutron.
- B. fissioned by slow (thermal) neutrons.
- C. fissioned by fast neutrons.
- D. fissioned by either slow or fast neutrons.

Ans:

Option A

[View All Answers](#)

Question - 154:

Nuclides having the same atomic numbers are termed as

- A. isotopes
- B. isomers
- C. isotones
- D. isobars

Ans:

Option B

[View All Answers](#)

Question - 155:

The most commonly used nuclear fuel in boiling water reactor is

- A. enriched uranium
- B. natural uranium
- C. plutonium
- D. monazite sand

Ans:

Option A

[View All Answers](#)

Question - 156:

Which one is radioactive in nature?

- A. Helium
- B. Deuterium
- C. Heavy hydrogen
- D. Tritium

Ans:

Option D

[View All Answers](#)

Question - 157:

_____ have the same mass number, but different nuclear charge.

- A. Isotopes
- B. Isobars
- C. Isotones
- D. none of these

Ans:

Option B

[View All Answers](#)

Question - 158:

The half life period of a radioactive element depends on its

- A. temperature
- B. pressure
- C. amount
- D. none of these

Ans:

Option D

[View All Answers](#)

Question - 159:

Graphite is used in nuclear reactor as

- A. insulation lining of the reactor.
- B. fuel.
- C. lubricant.



D. retarder of neutron velocity.

Ans:

Option D

[View All Answers](#)

Question - 160:

The half life period of a radioactive substance is best determined by counting the number of alpha particles emitted per second in a Geiger Muller counter from its known quantity. If the half life period of a radioactive substance is one month, then

- A. 3/4th of it will disintegrate in two months.
- B. it will completely disintegrate in two months.
- C. it will completely disintegrate in four months.
- D. 1/8th of it will remain intact at the end of four months.

Ans:

Option B

[View All Answers](#)

Question - 161:

Thermal shield is used in high powered nuclear reactors to

- A. protect the walls of the reactor from radiation damage.
- B. absorb the fast neutrons.
- C. slow down the secondary neutrons.
- D. protect the fuel element from coming in contact with the coolant.

Ans:

Option A

[View All Answers](#)

Question - 162:

The velocity of thermal (slow) neutrons triggering nuclear fission reaction (having energy equal to 0.025 eV) is about _____ metres/second.

- A. 1100
- B. 2200
- C. 3300
- D. 4400

Ans:

Option B

[View All Answers](#)

Question - 163:

_____ moderator is used in a fast breeder reactor.

- A. Graphite
- B. Heavy water
- C. Beryllium
- D. No

Ans:

Option D

[View All Answers](#)

Question - 164:

Which one is different for the neutral atoms of the isotopes of an element?

- A. Atomic weights
- B. Atomic numbers
- C. Number of protons
- D. Number of electrons

Ans:

Option A

[View All Answers](#)

Question - 165:

The ratio of atomic radius to its nuclear radius is about

- A. 105
- B. 108
- C. 1012
- D. 1015

Ans:

Option A

[View All Answers](#)

Question - 166:



The time required for half of the _____ of a radioactive isotope to decay is called its half life.

- A. nuclei
- B. electrons
- C. protons
- D. neutrons

Ans:

Option A

[View All Answers](#)

Question - 167:

Which is a fertile nuclear fuel?

- A. U-233
- B. U-235
- C. Pu-239
- D. Th-232

Ans:

Option D

[View All Answers](#)

Question - 168:

Nuclear fuel generally used in reactors is uranium oxide instead of uranium, because the former has higher

- A. melting point, hence can be subjected to higher temperature.
- B. density ; hence core volume for a given power output would be smaller.
- C. resistance to effects of irradiation.
- D. all (a), (b) and (c).

Ans:

Option D

[View All Answers](#)

Question - 169:

Thorium can be converted into U-233 in a _____ reactor.

- A. liquid metal cooled
- B. fast breeder
- C. thermal
- D. swimming pool

Ans:

Option B

[View All Answers](#)

Question - 170:

A moderator _____ the neutrons.

- A. slows down
- B. absorbs
- C. accelerates
- D. reflects

Ans:

Option A

[View All Answers](#)

Question - 171:

Nuclear fuel complex, Hyderabad is engaged in the job of

- A. manufacture of nuclear fuel elements/assemblies .
- B. processing of uranium ore.
- C. treatment of spent fuel.
- D. none of these.

Ans:

Option A

[View All Answers](#)

Question - 172:

Radioactive decay is a _____ change.

- A. chemical
- B. nuclear
- C. physical
- D. none of these

Ans:

Option B



[View All Answers](#)

Question - 173:

_____ nuclear reactor does not require a heat exchanger to supply steam to power turbine.

- A. Molten sodium cooled
- B. Helium cooled
- C. Boiling water
- D. Pressurised water

Ans:

Option C

[View All Answers](#)

Question - 174:

If 4 gm of a radioisotope has a half life period of 10 days, the half life of 2 gm of the same isotope will be _____ days.

- A. 5
- B. 10
- C. 20
- D. 30

Ans:

Option B

[View All Answers](#)

Question - 175:

Pick out the wrong statement.

- A. The nucleus of a hydrogen atom is identical with a proton.
- B. A, β -ray particle is identical with an electron.
- C. Mass of an electron is about 1/1800th of the lightest nucleus.
- D. Positron is heavier than a proton.

Ans:

Option D

[View All Answers](#)

Question - 176:

Specific gravity of uranium and plutonium is about

- A. 9
- B. 13
- C. 19
- D. 27

Ans:

Option C

[View All Answers](#)

Question - 177:

The function of moderators in nuclear reactor is to

- A. slow down the secondary neutrons.
- B. absorb the secondary neutrons.
- C. control the chain reaction.
- D. none of these.

Ans:

Option A

[View All Answers](#)

Question - 178:

Which of the following is not used as a nuclear fuel cladding material?

- A. Zircalloy
- B. Cadmium
- C. Ceramics
- D. Stainless steel

Ans:

Option B

[View All Answers](#)

Question - 179:

The atomic weight and atomic number of an element are A and Z respectively. What is the number of neutrons in the atom of that element?

- A. A+Z
- B. A- Z
- C. A



D. Z

Ans:

Option B

[View All Answers](#)

Question - 180:

Thermal nuclear reactors using enriched uranium as fuel contains a maximum of _____ percent fissile material i.e. U-235.

- A. 1
- B. 2
- C. 3
- D. 7

Ans:

Option C

[View All Answers](#)

Question - 181:

Which of the following types of nuclear reactors is most prone to radioactive hazards?

- A. Pressurised water reactor
- B. Gas cooled reactor
- C. Molten sodium cooled reactor
- D. Boiling water reactor

Ans:

Option D

[View All Answers](#)

Question - 182:

Thermal neutrons which are used to cause the fission of U-235 have energy _____ eV.

- A. < 0.025
- B. > 1
- C. 1-25
- D. > 200.

Ans:

Option A

[View All Answers](#)

Question - 183:

Out of the following places, a nuclear power plant is not located at

- A. Talcher (Orissa)
- B. Kaiga (Karnataka)
- C. Rawatbhata (Rajsthan)
- D. Kalpakkam (Tamilnadu)

Ans:

Option A

[View All Answers](#)

Question - 184:

Research reactors are normally meant for

- A. producing high neutron flux 10^{12} - 10^{13} neutrons/cm², sec and studying the effect of neutron bombardment on different materials.
- B. accelerating the neutrons.
- C. power generation.
- D. none of these

Ans:

Option A

[View All Answers](#)

Question - 185:

The ratio of volume of an atom to that of its nucleus is

- A. 10^{12}
- B. 10^{-12}
- C. 10^{-8}
- D. 10^8

Ans:

Option A

[View All Answers](#)

Question - 186:



Sodium melts (at atmospheric pressure) at a temperature of _____ C.

- A. 58
- B. 98
- C. 348
- D. 588

Ans:

Option B

[View All Answers](#)

Question - 187:

Hydrogen bomb employs the nuclear fusion of

- A. hydrogen
- B. deuterium
- C. tritium
- D. helium

Ans:

Option B

[View All Answers](#)

Question - 188:

The largest stable nucleus is

- A. U-235
- B. U-238
- C. Pb-206
- D. Bi-209

Ans:

Option A

[View All Answers](#)

Question - 189:

In a nuclear explosion, the energy is released primarily in the form of _____ energy-

- A. potential
- B. thermal
- C. kinetic
- D. electrical

Ans:

Option C

[View All Answers](#)

Question - 190:

Tarapur atomic power station

- A. has two boiling water reactors of American design.
- B. has an installed capacity of 400 MW.
- C. is the first power reactor in India, which became critical in 1969.
- D. all (a), (b) and (c).

Ans:

Option D

[View All Answers](#)

Question - 191:

Fast breeder Test Reactor (FBTR) is located at

- A. Kalpakkam (near Madras).
- B. Kota (in Rajasthan).
- C. BARC (Trombay).
- D. Tarapur (in Maharashtra).

Ans:

Option A

[View All Answers](#)

Question - 192:

The type of pump used for the recirculation of molten sodium coolant in liquid metal cooled reactor is a/an _____ pump.

- A. electromagnetic
- B. reciprocating
- C. centrifugal
- D. volute

Ans:

Option A



[View All Answers](#)

Question - 193:

"Critical mass" is the minimum mass of nuclear fissile material required for the

- A. sustainment of chain reaction.
- B. power generation on commercial scale.
- C. economic power generation.
- D. none of these.

Ans:

Option A

[View All Answers](#)

Question - 194:

Energy equivalent to one atomic mass unit (amu) is _____ MeV.

- A. 9.31
- B. 93.1
- C. 931
- D. 9310

Ans:

Option C

[View All Answers](#)

Question - 195:

Velocity of the thermal neutron (< 0.025 eV) used for fission of U-235 is around _____ m/sec.

- A. 1
- B. 2200
- C. 3×10^{11}
- D. 9×10^{21}

Ans:

Option B

[View All Answers](#)

Question - 196:

MeV is the unit of

- A. radioactivity
- B. energy
- C. potential difference
- D. none of these

Ans:

Option B

[View All Answers](#)

Question - 197:

Hydrogen has _____ isotopes.

- A. no
- B. one
- C. two
- D. three

Ans:

Option D

[View All Answers](#)

Question - 198:

A homogeneous reactor is the one, in which the

- A. fissile atoms are evenly distributed throughout the mass of nuclear reactor.
- B. same substance (e.g. heavy water) is used as moderator & coolant.
- C. the fuel and the moderator is mixed to form a homogeneous material.
- D. all (a), (b) and (c).

Ans:

Option C

[View All Answers](#)

Question - 199:

Which one is the radioactive isotope of hydrogen?

- A. Deuterium
- B. Ortho-hydrogen
- C. Tritium



D. None of these

Ans:

Option C

[View All Answers](#)

Question - 200:

Final product of uranium extraction plant at Jadugoda (Bihar) is

- A. uranium
- B. uranium oxide
- C. uranium carbide
- D. magnesium diuranate

Ans:

Option D

[View All Answers](#)

Question - 201:

Molten sodium (as a coolant in fast breeder reactor)

- A. can't attain high temperature at normal pressure.
- B. is not at all corrosive, even at a higher temperature.
- C. is highly radioactive at elevated temperatures and can cause explosion, when it comes in contact with air or water.
- D. none of these

Ans:

Option C

[View All Answers](#)

Question - 202:

Which of the following is not, a fertile material?

- A. Th-232
- B. U-238
- C. U-233
- D. none of these

Ans:

Option C

[View All Answers](#)

Question - 203:

The atomic number of an element is equal to the number of _____ present in its atom.

- A. neutrons
- B. electrons
- C. protons
- D. either (b) or (c)

Ans:

Option D

[View All Answers](#)

Question - 204:

Which of the following is a moderating material used in nuclear reactor ?

- A. Graphite.
- B. Cadmium.
- C. Zircalloy (an alloy of zirconium and aluminium).
- D. Stainless steel.

Ans:

Option A

[View All Answers](#)

Question - 205:

A nuclear reactor can't be used for

- A. the production of radioisotopes.
- B. supplying intense fields or beams of neutron for scientific experiments.
- C. marine ship propulsion.
- D. none of these.

Ans:

Option D

[View All Answers](#)

Question - 206:



Fission of U-235 on slow neutron bombardment can be represented by

- A. $92\text{U}235 + 3\text{Y}1\ 56\text{Ba}143 + 36\text{Kr}90$
- B. $92\text{U}235 + 0\text{n}1\ 56\text{Ba}143 + 36\text{Kr}90 + 3\ 0\text{n}1$
- C. $92\text{U}235 + 0\text{n}1\ 56\text{Ba}143 + 36\text{Kr}90 + 3\ 0\text{n}1 + \text{Q (energy)}$
- D. $92\text{U}235 + 0\text{n}1\ 92\text{U}236 + 30\text{n}1 + \text{Q (energy)}$

Ans:

Option C

[View All Answers](#)

Question - 207:

The atomic number of a radioactive element is not changed, when it emits _____ rays.

- A. α
- B. β
- C. γ
- D. α & β

Ans:

Option C

[View All Answers](#)

Question - 208:

Ordinary water is not used as a moderator because, it

- A. has a low absorption cross-section.
- B. has a low scattering cross-section.
- C. absorbs neutrons.
- D. does not absorb neutrons.

Ans:

Option C

[View All Answers](#)

Question - 209:

Moderating material used in a thermal-reactor should be a

- A. good absorber of neutrons.
- B. solid substance.
- C. poor absorber of neutrons.
- D. none of these.

Ans:

Option C

[View All Answers](#)

Question - 210:

Which is used as a coolant in nuclear reactor due to its high capture cross-section ?

- A. H_2
- B. N_2
- C. He
- D. CO_2

Ans:

Option A

[View All Answers](#)

Question - 211:

A boiling water reactor is the one, in which the

- A. coolant water is allowed to boil in the core of the reactor.
- B. coolant water, after being heated in the reactor core, generates steam in a boiler.
- C. pressurised water is pumped into the core.
- D. fuel and the coolant are thoroughly mixed to form a homogeneous solution.

Ans:

Option A

[View All Answers](#)

Question - 212:

Spent fuel from the nuclear thermal reactor contains

- A. fission products
- B. plutonium
- C. unused fuel
- D. all (a), (b) & (c)

Ans:

Option D



[View All Answers](#)

Question - 213:

Which of the following may not need a control rod ?

- A. Liquid metal cooled reactor.
- B. Fast breeder reactor.
- C. Candu reactor.
- D. None of these.

Ans:

Option D

[View All Answers](#)

Question - 214:

Thorium-232 is converted into uranium-233 in a/an _____ nuclear reactor.

- A. thermal
- B. fast breeder
- C. heavy water moderated
- D. enriched uranium

Ans:

Option B

[View All Answers](#)

Question - 215:

Fast breeder reactors do not

- A. use Th-232 as fissile fuel.
- B. convert fertile material to fissile material.
- C. use fast neutrons for fission.
- D. use molten sodium as coolant.

Ans:

Option A

[View All Answers](#)

Question - 216:

One 'amu' is equivalent to

- A. 9.31 MeV
- B. 931 eV
- C. 931 Mev
- D. 931J

Ans:

Option C

[View All Answers](#)

Question - 217:

Commercial power generation from fusion reactor is not yet possible, because

- A. it is difficult to control fusion reaction.
- B. the fuel required (e.g. deuterium and tritium) is scarce.
- C. it is difficult to initiate fusion reaction.
- D. quantity of fuel required for initiating fusion reaction is prohibitively high.

Ans:

Option A

[View All Answers](#)

Question - 218:

The amount of a radioisotope remaining undecayed after a time equal to four times its half life, will be _____ percent.

- A. 3.125
- B. 6.25
- C. 12.50
- D. 25

Ans:

Option B

[View All Answers](#)

Question - 219:

Which of the following may not need a moderator?

- A. Candu reactor
- B. Fast breeder reactor
- C. Homogeneous reactor



D. Pressurised water reactor

Ans:

Option B

[View All Answers](#)

Question - 220:

The time taken for a radioactive element to reduce to 50% of its original weight is _____ years, if its half life period is 12 years.

- A. 24
- B. 18
- C. 6
- D. 36

Ans:

Option B

[View All Answers](#)

Question - 221:

Heat is generated in a nuclear reactor (thermal) by

- A. combustion of a nuclear fuel e.g. uranium.
- B. fusion of atoms of uranium.
- C. absorption of neutrons in uranium atoms.
- D. fission of U-235 by neutrons.?

Ans:

Option D

[View All Answers](#)

Question - 222:

The decay product of tritium (a beta emitter) is

- A. lithium
- B. helium
- C. deuterium
- D. hydrogen?

Ans:

Option B

[View All Answers](#)

Question - 223:

Gas cooling as compared to water cooling of nuclear reactors

- A. can not attain a high temperature.
- B. is more efficient as gas has a higher specific heat.
- C. can produce only saturated steam for feeding to power turbine.
- D. none of these.

Ans:

Option D

[View All Answers](#)

Question - 224:

Which of the following is artificially produced as it does not occur in nature ?

- A. Uranium-235
- B. Uranium-233
- C. Plutonium-239
- D. Both (b) and (c)

Ans:

Option D

[View All Answers](#)

Question - 225:

The second underground nuclear test was conducted by India at

- A. Jaisalmer
- B. Pokhran
- C. Kalpakkan
- D. Narora

Ans:

Option B

[View All Answers](#)

Question - 226:



The amount of a radioactive material (having a half life of 100 years) remaining after 400 years will be _____ of its original weight.

- A. 1/2
- B. 1/4
- C. 1/8
- D. 1/16

Ans:

Option D

[View All Answers](#)

Question - 227:

Which is the most commonly used molten metal for cooling of nuclear reactors ?

- A. Calcium
- B. Sodium
- C. Mercury
- D. Zinc

Ans:

Option B

[View All Answers](#)

Question - 228:

An electron has a mass that is approximately _____ that of the proton.

- A. 1836 (approximately)
- B. 1/1836 (approximately)
- C. 1
- D. \hat{z} ?

Ans:

Option B

[View All Answers](#)

Question - 229:

Which of the following is not a naturally occurring nuclear fuel

- A. Uranium-238
- B. Thorium-233
- C. Plutonium-239
- D. None of these

Ans:

Option C

[View All Answers](#)

Question - 230:

The mass number of an element is not changed, when it emits _____ radiations.

- A. α & β
- B. β & γ
- C. γ & α
- D. α , β , & γ ?

Ans:

Option B

[View All Answers](#)

Question - 231:

The decrease in the atomic number is not observed in case of

- A. electron capture
- B. β -emission
- C. α -emission
- D. positron emission?

Ans:

Option B

[View All Answers](#)

Question - 232:

Which of the following may be used to measure the rate of nuclear disintegration?

- A. Geiger-Muller Counter
- B. Cyclotron
- C. Cold chamber
- D. Mass spectrograph?

Ans:

Option A



[View All Answers](#)

Question - 233:

What is the history of Nuclear Engineering?

Ans:

Nuclear engineering was born in the 20th century with the announcement in 1939 of the discovery of nuclear fission by the German chemists.

[View All Answers](#)

Question - 234:

Do you know what does a nuclear engineer do?

Ans:

Developing nuclear equipment, such as reactor cores and radiation shielding

Monitoring nuclear plant design, construction and operations to ensure that the plants meet safety standards

Writing instructions for the handling and disposal of nuclear waste

Testing whether methods of using nuclear material, reclaiming nuclear fuel or disposing of nuclear waste are acceptable

Taking corrective action or ordering plant shutdowns in emergencies

Examining nuclear accidents and gathering data that can be used to prevent future accidents

[View All Answers](#)

Question - 235:

Do you know what is Nuclear Engineering?

Ans:

Nuclear engineering is the branch of engineering concerned with the application of the breakdown (fission) as well as the fusion of atomic nuclei and/or the application of other sub-atomic physics, based on the principles of nuclear physics.

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