QB365 Question Bank Software Study Materials

Nuclear Physics 50 Important 1 Marks Questions With Answers (Book Back and Creative)

10th Standard

Science

Total Marks : 50

Multiple Choice Question

50 x 1 = 50

1) Man-made radioactivity is also known as _____.

(a) Induced radioactivity (b) Spontaneous radioactivity (c) Artificial radioactivity **(d) a & c**

2) Unit of radioactivity is _____

(a) roentgen (b) curie (c) becquerel **(d) all the above**

3) Artificial radioactivity was discovered by_____

(a) Bequerel **(b) Irene Curie** (c) Roentgen (d) Neils Bohr

4) In which of the following reaction, the mass number decreases by four of the daughter nucleus?

(a) α decay (b) β decay (c) γ decay (d) neutron decay

5) _____ isotope is used for the treatment of cancer.

(a) Radio Iodine **(b) Radio Cobalt** (c) Radio Carbon (d) Radio Nickel

6) Gamma radiations are dangerous because

(a) it affects eyes & bones (b) it affects tissues **(c) it produces genetic disorder**

(d) it produces enormous amount of heat

7) _____ aprons are used to protect us from gamma radiations

(a) Lead oxide (b) Iron **(c) Lead** (d) Aluminium

8) Which of the following statements is/are correct?

i. α particles are photons

ii. Penetrating power of γ radiation is very low

iii. Ionization power is maximum for α rays

iv. Penetrating power of γ radiation is very high

(a) (i) & (ii) are correct (b) (ii) & (iii) are correct (c) (iv) only correct **(d) (iii) & (iv) are correct**

9) Proton - Proton chain reaction is an example of_____

(a) Nuclear fission (b) α - decay **(c) Nuclear fusion** (d) β - decay

10) In the nuclear reaction ${}_6X^{12} \xrightarrow{\alpha\ decay} {}_zY^A$, the value of A & Z.

(a) 8, 6 **(b) 8, 4** (c) 4, 8 (d) cannot be determined with the given data

11) Kamini reactor is located at _____

(a) Kalpakkam (b) Koodankulam (c) Mumbai (d) Rajasthan

12) Which of the following is/are correct?

i. Chain reaction takes place in a nuclear reactor and an atomic bomb.

ii. The chain reaction in a nuclear reactor is controlled

iii. The chain reaction in a nuclear reactor is not controlled

iv. No chain reaction takes place in an atom bomb

(a) (i) only correct **(b) (i) & (ii) are correct** (c) (iv) only correct (d) (iii) & (iv) are correct

13) Energy generation in stars is due to

(a) chemical reaction (b) fission **(c) fusion of light nuclei** (d) Fusion of heavy nuclei

14) Fusion reaction is initiated with the help of

(i) low temp

(ii) high temp

(iii) low press

(iv) high press

(a) (i) is correct (b) (ii) & (iv) are correct (c) (i) & (iv) are correct **(d) (ii) & (iv) are correct**

15) The main source of stellar energy is

(i) fission reactors

(ii) fusion reaction

(iii) chemical reaction

(iv) thermonuclear reactions

(a) (i) is correct (b) (i) & (ii) are correct (c) (i) & (iv) are correct **(d) (ii) & (iv) are correct**

16) Elements having atomic number greater than _____ are radioactive.

(a) 48 (b) 68 (c) 88 **(d) 83**

17) ∝- rays consist of a - particles, which are _____ nuclei.

(a) hydrogen **(b) helium** (c) heavy water (d) boron

18) Penetration power is the greatest in_____ rays

(a) alpha (b) beta **(c) gamma** (d) helium

19) _____ rays contain 1 - unit of negative charge.

(a) Alpha **(b) Beta** (c) Gamma (d) Hydrogen

20) Gamma - rays are _____ in nature.

(a) gravitational **(b) electromagnetic** (c) weak (d) nuclear

21) ${}_4Be^9 + {}_2He^4 \rightarrow {}_6C^{12} + ?$

(a) electron (b) proton **(c) neutron** (d) hydrogen

22) Which of the following is used to detect the presence of block in blood vessels.

(a) ${}_{15}P^{31}$ (b) ${}_{15}P^{32}$ (c) ${}_{26}Fe^{59}$ **(d) ${}_{11}Na^{24}$**

23) Radio - carbon dating is used to _____

(a) treat diseases (b) increase agricultural yield (c) sterilize **(d) determine the age of a specimen**

24) Roentgen (R) is the unit to measure _____.

(a) X - ray strength (b) number of holes produced by X - rays **(c) radiation exposure** (d) number of cancer cells

25) If the exposure is about 600 R, it causes _____.

(a) skin disorder (b) hair loss (c) teeth loss **(d) death**

26) Radioactive materials are kept -in thick -walled _____ containers.

(a) aluminium (b) iron (c) brick **(d) lead**

27) U^{238} kept in nuclear reactors, generally decay into _____.

(a) Np^{239} (b) PU^{239} **(c) both (a) and (b)** (d) U^{235}

28) Minimum size of a system in which at least 1 neutron is available for further fission is called_____.

(a) cut - off size **(b) critical size** (c) range of reactor (d) capability criteria

29) _____ is fissionable by neutrons of all energies.

(a) U^{235} (b) U^{238} (c) U^{239} (d) Np^{239}

30) Atom bomb explosions produce _____ waves.

(a) gravitational (b) sand **(c) shock** (d) electric

31) The first nuclear reactor was built at _____.

(a) Newyork (b) San Fransisco (c) New Jersey **(d) Chicago**

32) For production of radio - isotopes, we use _____ reactions

(a) research (b) power (c) production (d) absorber

33) A good _____ shows down neutrons by elastic collisions and it does not remove them by absorption.

(a) fuel **(b) moderator** (c) coolant (d) control rod

34) Commonly used moderators are _____ and_____.

(a) D_2O, H_2O (b) D_2, H_2 (c) O_2, H_2 (d) O_2,N_2

35) Which of the following is not a moderator?

(a) liquid sodium (b) ordinary water (c) graphite (d) heavy water

36) Mass of the fissile material at the critical size is called _____.

(a) Cut - off mass (b) Einstein's mass value (c) Curie mass **(d) Critical mass**

37) _____ prevents the leakage of neutrons by reflecting them back.

(a) Mirrors (b) Glass **(c) Neutron reflectors** (d) Coolant

38) Matter is made up of tiny indestructible units called.

(a) Atoms (b) molecules (c) element (d) compound

39) _____ explained that the mass of an atom is concentrated in its central part called nucleus.

(a) JJ Thomson (b) Democritus **(c) Rutherford** (d) milikan

40) Henri Becqurrel is a _____ physicist.

(a) French (b) English (c) Italian (d) german

41) Decay of Uranium to thorium with the emission of an _____ particles.

(a) α (b) γ (c) cosmic (d) β

42) Cathode rays contains

(a) proton **(b) electron** (c) neutron (d) positron

43) Pitch blende is an ore of

(a) Uranium **(b) Radium** (c) Plutonium (d) Aluminum

44) Arrange the following rays in ascending order according to the ionizing Power

i) Alpha

ii) Beta

iii) Gamma

(a) Gamma, Beta, Alpha (b) Alpha, Beta, Gamma (c) Gamma, Alpha, Beta (d) Alpha, Gamma, Beta

45) Which of the following is the heaviest one?

(a) Hydrogen **(b) Alpha** (c) Beta (d) Gamma

46) Reason for nuclear fission to be a chain reaction is

(a) 200 MeV energy is produced (b) two smaller nuclei formed **(c) 2 or 3 neutrons are formed for further reaction**

(d) all of these

47) In a chain-reactions rate of, production of neutrons must be more than the rate of its loss is a

(a) Critical level **(b) Supercritical level** (c) Subcritical level (d) both (a) and (c)

48) eV is a unit of

(a) radioactivity (b) critical mass **(c) energy released in nuclear fission** (d) radiation

49) Nuclear reactor is used for

(a) to generate electricity (b) to produce radio isotopes (c) to do research in nuclear physics **(d) all the above**

50) ${}_{Z}X^{A}$ is an atom that releases two alpha rays and followed by two beta rays, now the atomic number and mass number of the daughter nucleus.

(a) Z-8, A-8 (b) Z-4, A-8 **(c) Z-2, A-8** (d) Z-4, A-6