

Name:		Roll No.		Subject	Physics
Test Type	MCQs, Short & Long question	Class	12	Date	
Chapter	21 Complete	Unit	21	Time	

Q. No. 1 Tick the best option

20

- Electrons are:
 - Hadrons
 - Leptons
 - Quarks
 - Baryons
- The building blocks of proton and neutrons are called:
 - Quarks
 - Electrons
 - Protons
 - Ions
- Subatomic particles are divided into:
 - Six groups
 - Five groups
 - Four groups
 - Three groups
- Two down quarks and one up quark make:
 - Photon
 - Proton
 - Deuteron
 - Neutrons
- One joule of energy absorbed per kilogram of body is:
 - Rem
 - Roentgens
 - Grey
 - Becquerel
- The energy output per nucleon in fusion is greater than energy output per nucleon in fission:
 - 25 times
 - 5 to 7 times
 - 200 times
 - 8 to 10 times
- The range of weak nuclear force is of the order of:
 - 10^{-9} m
 - 10^{-10} m
 - 10^{-17} m
 - 10^{-15} m
- Mass of meson is:
 - Greater than proton
 - Less than proton
 - Equal to proton
 - Equal to neutron
- Circulation blood can be studied by using radioactive isotope:
 - Cobalt-60
 - Phosphorous-32
 - Sodium -24
 - Iodine -131
- 1 Curie =
 - 3.7×10^{10} dis/sec
 - 7.3×10^{-10} dis/sec
 - 3.7×10^5 dis/sec
 - 7.3×10^{10} dis/sec
- In Fusion reaction, the energy released per nucleon (in P-P chain reaction) is about:
 - 2 MeV
 - 5MeV
 - 15MeV
 - 6.4MeV
- The temperature of the core of the sun is about:
 - 10 million °C
 - 15 million °C
 - 20 million °C
 - 30 million °C
- Typical source of β -particle is:
 - Radon-222
 - Cobalt-60
 - Uranium-238
 - Strontium-94
- The background radiations that we are exposed per year on the average is:
 - 1 mSv
 - 2 mSv
 - 3 mSv
 - 4 mSv
- The percentage of original quantity of radioactive materials left after five half-lives is nearly:
 - 6%
 - 5%
 - 4%
 - 3%
- The reciprocal of the decay constant is:
 - Frequency
 - Half-life
 - Mean-life
 - Radioactive constant
- Particle not emitted by radioactive substance are:
 - Gamma rays
 - Electrons
 - ${}^4_2\text{He}$
 - Protons
- Subatomic particles are divided into:
 - Photons
 - Leptons
 - Hadrons
 - All of these
- In nuclear reactor, uranium is enriched up-to:
 - 1% to 2%
 - 1 to 3%
 - 2 to 3%
 - 2 to 4%
- Energy given out per nucleon in p-p reaction is:
 - 5.2 Mev
 - 6 Mev
 - 6.4 Mev
 - 7.7 Mev

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Q. No. 2 Write the short answer of these following question

12 x 2 = 24

- 1) Define nuclear activity and its unit.
- 2) What are leptons? Names at least two leptons.
- 3) Explain the p-p reaction in the sun with the help of equations.
- 4) What do we mean that the term critical mass?
- 5) A particle which produces more ionization is less penetrating. Why?
- 6) Why are Heavy Nucleus unstable?
- 7) What factors make a fusion reaction difficult to achieve?
- 8) What is Radiography? What is its Importance?
- 9) How can radioactivity help in the treatment of Cancer?
- 10) Write down the names of different quarks.
- 11) How can we justify emission of electron from inside of a nucleus during beta decay?
- 12) Discuss the advantages and disadvantages of nuclear power compared to the use of fossil fuel generated power?

Q. No. 3 Long question

5 + 3 = 08

- 1) What is a nuclear reactor? Discuss the function of its main parts.
- 2) How much energy is absorbed by a man of mass 80 kg who receives a lethal whole body equivalent dose of 400 rem in the form of low energy neutrons for which RBE factor is 10?

PARHOZONE

HAR PAL, HAR TOPIC