

Model Question Paper
Nuclear Chemistry - Part III

12th Standard

Chemistry

Reg.No. :

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I. Answer all the questions.

II. Use Blue pen only.

III. Question No 14 is compulsory.

Time : 00:30:00 Hrs

Total Marks : 40

5 x 1 = 5

Section-A

- 1) In nuclear reaction _____ is / are balanced on both sides
(a) mass (b) number of atoms (c) mass number (d) atomic number and mass number
- 2) Mary Curie was awarded Nobel prize for the discovery of
(a) radioactivity (b) radium and polonium (c) optical activity (d) uranium and thorium
- 3) The phenomenon of radioactivity is not affected by
(a) number of atoms (b) pressure (c) temperature (d) both b and c
- 4) Decay constant of radioactive disintegration is
(a) independent of temperature (b) independent of initial concentration (c) independent of pressure (d) all the above
- 5) Average life τ is equal to
(a) λ^{-1} (b) $10t_{1/2}$ (c) $1.44t_{1/2}$ (d) both 'a' and 'c'

Section-B

5 x 3 = 15

- 6) Give the theory of radioactive disintegration
- 7) What is spallation reaction? Give an example
- 8) What is meant by nuclear fission?
- 9) Write a note on nuclear power generator.
- 10) What is nuclear fusion?

Section-C

4 x 5 = 20

- 11) Explain the nuclear reaction that takes place in the sun
- 12) Mention the use of radioisotopes in the field of i) study of hydrolysis of ester, ii) mechanism of photosynthesis in plants.
- 13) How are radioactive isotopes useful in medicine?
- 14) a) Distinguish between nuclear fusion reaction and fission reactions.

(OR)

- b) Give the differences between chemical and nuclear reactions
