

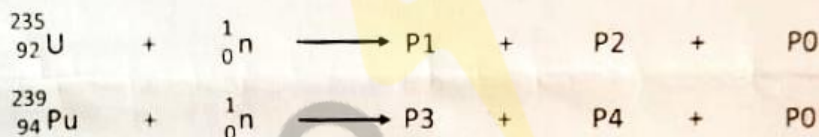
TIME: 14.00-16.00 Hrs

DATE: 24/09/2022

65 Marks

1. Answer the below questions:

- (a) Arrange the following hydrocarbons in descending of carbon numbers: Methane, Lubricating oil, Asphalt, Lignoin, Petroleum ether, Paraffin Wax. (03)
- (b) The _____ solar cells are made up of ABX_3 type materials, whereas, _____ solar cells are comprised of two or more cells. (02)
- (c) What does A, B and X sites comprise of in ABX_3 . (05)
- (d) _____ energy is obtained from reservoirs of natural hot water or from hot springs, lava, and _____. (02)
- (e) In the photovoltaic effect _____ energy is converted into _____ energy. (02)
- (f) The two major classifications of planktons are _____ and _____. (02)
- (g) In the thermal cracking process, lighter petroleum fractions such as _____ naphtha are cracked thermally and BTX (_____, _____, and _____) all aromatic compounds are obtained. (04)
2. With appropriate figure, illustrate the entire process of planktons deposition and how over time these planktons get converted into fossil fuels / petroleum products. (12)
3. Indicate the products P0, P1, P2, P3 and P4 formed in the nuclear fission reactions: (06)



4. List five fraction sets, from C5 to C12 and higher, that are separated out by petroleum refining process, their basic physical characteristics, applications and carbon range they possess. (10)
5. Define: Thermal Cracking, Catalytic Cracking, Steam Cracking and High pressure thermal cracking (08)
6. In the steam-cracking process, explain the roles of the following: (09)
- (a) Cracking and quenching
 - (b) Compression and drying
 - (c) Separation of products

Gas
Petroleum ether
Lignoin
Gasoline/petrol