NOVEMBER 2017 **1713102/UCYA11C**

Time : Three hours Maximum : 75 marks

PART A — (10 × 2 = 20 marks)

Answer any TEN questions.

Each question carries 2 marks.

1. Define isotopes and isobars.
2. What is nuclear fission reaction?
3. Give the components of LPG.
4. What is reverse osmosis?
5. What are the requisites of a good fertilizer?
6. What is free radical?
7. Define inductive effect.
8. What is reversible process?
9. State third law of thermodynamics.
10. State Stark Einstein law.
11. What is quantum yield?
12. What is photo synthesis?

PART B — (5 × 5 = 25 marks)

Answer any FIVE questions.

Each question carries 5 marks.

13. Complete the following equations using group displacement law.

(a) $Ca_{20}^{40} + x \rightarrow {}_{27}Co^{55} + {}_{1}H^{1}$

(b) $P_{15}^{30} - B \rightarrow x + {}_{0}n^{1}$.

14. Give any four differences between chemical reaction and nuclear reaction.

15. How is urea synthesised?

16. Benzaldehyde reacts with aniline but tribromo aniline does not react with aniline why?

17. Write the need of second law of thermodynamics.

18. What are the significances of free energy?

19. Distinguish phosphorescence and fluorescence.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

Each question carries 10 marks.

20. What are the applications of radio active isotopes in carbon dating and medical field?

21. Explain the purification of water of de-ionisation process.

22. Explain sulphonation of benzene with mechanism.

23. Define the terms :

    (a) System

    (b) Surrounding

    (c) Isothermal

    (d) Adiabatic process and

    (e) Endo thermic reaction.

24. Explain Hydrogen – Chlorine photo chemical reaction.

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