

used to heat 1200 grams water from 25°C to 40°C. Find the calorific value of ethanol. Also define calorific value.

13. Draw a neat and well labeled diagram of the Bessemer converter. Write the reactions for the removal of the impurities in the Bessemer converter.
14. Give the equations for: - a)
 Preparation of nylon b)
 preparation of soap c)
 commercial method for the preparation of acetic acid.
15. A compound 'A' of the formula C_3H_6O is oxidised to a compound 'B' of the formula $C_2H_4O_2$ in the presence of a compound 'C'. Compound 'B' reacts with NaOH to give sodium ethanoate as one of the by-product. Name the compounds 'A', 'B', 'C'. Give the chemical equations for the reaction between 'A' and 'B' and between 'B' and NaOH.
16. a) Give the equations for the preparation of sulphuric acid by the contact process.
b) In the contact
 process why sulphur trioxide is is not mixed with water to form sulphuric acid. OR
 Describe the process of 'Steam reforming' with
 the help of the necessary equations.
17. Describe an activity to show that ammonia is highly soluble in water. Write the physical properties of ammonia.
18. Explain the construction and working of a compound microscope with the help of a neat and labeled ray diagram. Write the formula for the magnification in the case of a simple microscope.
19. Explain the working of a DC motor with the help of a labeled diagram. Give the principle for the working of an AC generator.
OR With the help of a well labeled
 diagram describe the refining of petroleum in the fractional distillation tower. Name any two non-volatile components of petroleum.
20. a) Describe the process of enrichment of haematite.
 b) With the help of necessary chemical equations describe 'Bayer's process.

Section B

21. What decides the functional property of a gene?
22. What do you mean by parthenogenesis?
23. Give the function of the stem cells.

24. Give the major consequences when excessive carbon dioxide and methane are present in the earth's atmosphere.
25. Draw a well labeled diagram of a part of the phloem tissue.
26. Describe any three methods of controlling gaseous air pollutants.
27. Describe the nutrition in amoeba with the help of neat and labeled diagrams.
28. Give the three main features of the double helical model of DNA.
29. Explain the mechanism of blood clotting.
- OR
- Give the functions of the following:-
- a) Cerebellum
 - b) Cerebrospinal fluid
 - c) synapse
30. a) Draw a well labelled diagram of the human male reproductive system.
- b) Explain the process of fertilization in the human beings.