Q.28 Explain in brief the construction and working of Chinese digester used for biogas production.

Q.29 Enlist the uses of different products obtained from atmospheric distillation of crude oil.

Q.30 Explain the process of origin of petroleum by any one theory.

Q.31 List the different factors which are considered while the storage of coal.

Q.32 Classify the various furnaces.

Q.33 Write the advantages and disadvantages of wind energy.

Q.34 Write the names of different types of solar power plants, explain parabolic trough solar power Plant.

Q.35 Describe the factors affecting the sustainable growth.

SECTION-D

Note : Long Answer type question. Attempt any two questions. (2x10=20)

Q.36 Explain the construction and working of Bomb calorimeter, also calculate the calorific value of any fuel.

Q.37 Explain the construction and working of hydroelectric power plant with its advantages and disadvantages.

Q.38 Explain the biochemical process of biomass conversion.

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4th Sem / Chemical Engg.
Subject : Energy Technology

Time : 3 Hrs. **M.M. : 100**

SECTION-A

Note : Multiple choice questions. All questions are compulsory. (10x1=10)

Q.1 Coal liquefaction refers to the process of:
- a) Washing coal to remove impurities.
- b) Turning coal into natural gas
- c) Turning coal into crude petroleum
- d) None

Q.2 The major non-renewable energy usage in India is _____.
- a) Nuclear
- b) Petroleum & other liquids
- c) Natural gas
- d) Coal

Q.3 Fuel used in thermal power plants is:
- a) Water b) Uranium
- c) Biomass d) Fossil fuels

Q.4 Horizontal axis and vertical axis are the types of:
- a) Nuclear reactor b) Wind mills
- c) Biogas reactor d) Solar cell

Q.5 Which of the following is called blue gas:

a) Coke over gas b) Water gas
c) Natural gas d) All of the above

Q.6 Catalyst used in Fischer-Tropsch process is:
a) Nickel b) Zink oxide
c) Alumina d) Thorium oxide

Q.7 Gobar Gas constitutes mainly of:
a) CH_4 and CO_2 b) CO and CO_2
c) N_2 and CH_4 d) N_2 and CO

Q.8 Low temperature carbonization takes place at:
a) 300^0C b) 1100^0C
c) 700^0C d) 500^0C

Q.9 A solar cell is an electrical device that converts the energy of light directly into electricity by the_____
a) Photovoltaic effect b) Chemical effect
c) Atmospheric effect d) Physical effect

Q.10 Where is the largest Wind Farm located in India?
a) Jaisalmer Wind Park, Rajasthan
b) Muppandal Wind Farm, Tamil Nadu
c) Vaspet Wind Farm, Maharashtra
d) Chakala Wind Farm, Maharashtra

SECTION-B

Note : Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Expand HAWT.

Q.12 Write the temperature range of high temperature carbonization.

Q.13 Wind energy is example of non-conventional source of energy, is it true or false?

Q.14 Write the power generation capacity of largest tidal power plant in the world.

Q.15 Write anyone name of the process by which synthetic fuel is produced.

Q.16 Write the name of latest theory for origin of petroleum.

Q.17 Write the temperature range of Naptha cut in fractional distillation of crude petroleum.

Q.18 Write the calorific value of CNG.

Q.19 Net calorific value is _____ than gross calorific value of any fuel.

Q.20 Write anyone use of motor spirit.

SECTION-C

Note : Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Describe low temperature carbonization process.

Q.22 Illustrate the effects of use of conventional energy sources for sustainable development.

Q.23 Describe the ultimate analysis of coal.

Q.24 Enlist the advantages and disadvantages of thermal power plant.

Q.25 Describe the manufacturing process of producer gas.

Q.26 Describe Fischer - Tropsch process.

Q.27 Describe primary and secondary fuels with examples.