UG 4th Semester Examination - 2025 (Under NCCF)
Award: - B.Sc
Discipline : Chemistry
Course Type : SEC-3
Course Code : BSCCEMSE401
Course Name : Fuel Chemistry

Full Marks : 35   **Time - 2 hours**

1. **Answer any five questions:**   1×5=5

   a)   What is coal gas ?

   b)   What is the use of Gasoline ?

   c)   Name two types of coal having different values of fixed carbon.

   d)   Write down the uses of coal tar.

   e)   Give an exaple of clean fuel.

   f)   What is the full form of BTU ?

   g)   Write the chemical formula of water gas.

   h)   What is conducting lubricant ?

2. **Answer any five questions:**   5×2=10

   a)   What are the different between paraffin base and naphthene base petroleum ?

   b)   What do you mean by carbonisation of coal ?

   c)   Explain the advantages of antiknock compound.

   d)   What is carburetted water gas ?

   e)   What is the component of producer gas ?

   f)   What is anti-knock agent ? Give one example.

   g)   Will graphite act as lubricant ? Explain why so.

   h)   What should be the desired ralation of viscosity of lubricants with temperature ?

3. **Answer any two questions for the students appearing for their regular courses:**   5×2=10

   a)   Define Fuel and its flash point. Give example of solid, liquid and gaseous fuels.   2+3

   b)   What is petroleum ? Discuss its classification.   2+3

   c)   Write the chemical reaction involved during the production of producer gas from carbon. Why is steam used here?   3+2

   d)   What is lubricating oils ? Give examples. Write down the characteristics of good lubricanting oils.

                                                                              1+1+3

4. **Answer any one question:** 10×1=10

   a) i)   Define Cloud point and Pour point. Which property of lubricant is indicated by pour point? What is pour point improvers ? Give an example.

       ii) Compare between CNG and LNG in terms of their state, storage and transport and usage. What is the basic composition of LPG and LNG ? (2+1+2)+(3+2)

   b) i)   How coal liquefaction can be done?

       ii) What is the use of isoprene ? How catalytic cracking is different from thermal cracking?

       iii) Give the difference between renewable and non-renewable resource. 4+(2+2+2)