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APPLIED CHEMISTRY-II
2nd Exam/Common/2254/May'17

Duration: 3 Hrs. **M. Marks: 75**

SECTION – A

Q1 (a) Fill in the blanks. **10x1=10**

i. Calcination is heating the ore in the_____ of air.
ii. The purest form of iron is _____.
iii. The metal acting as _____ is always get corroded.
iv. Producer gas is a mixture of _____.
v. A good fuel should possess _____ ignition temperature.
vi. The unit of viscosity is _____.
vii. Lime acts as a _____ in silica bricks.
viii. Enamel is pigmented _____.
ix. The monomer of polyvinylchloride is _____.
x. A pigment imparts _____ to paint.

(b) Fill in the blanks. **5x1=5**

i. Combustion of a fuel is an exothermic process.
ii. Mineral oils are good in oiliness.
iii. Nylon -66 is obtained by addition polymerization reaction.
iv. Corrosion involves oxidation process.
v. A forestation causes air pollution.

SECTION – B

Q2. Attempt any ten questions. **10x3=30**

a. Explain Froth flotation process for the concentration of sulphide ores.
b. What is the difference between cast iron, wrought iron and steel?
c. What is the cause of corrosion?
d. Distinguish between octane number and cetane number.
e. Write a short note on natural gas.
f. Define viscosity. What is the effect of temperature on viscosity?
g. Name the various constituents of paint. Explain the functions of a drying oil.
h. What is a glass? What is the composition of glass?
i. State and explain Pilling- Bedworth rule.
j. Differentiate between thermoplastics and thermosetting plastics.
k. How is Nylon-66 synthesized from its monomers? Write its uses.
l. What are the characteristics of a good refractory material?
m. What are primary and secondary pollutants? Give two examples of each.

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SECTION- C

Attempt any 3 questions. **3x10=30**

Q3. Name the important ores of copper. Describe the extraction of copper from its main ore. **10**

Q4 (a) What are the theories of corrosion? Describe briefly the acid theory. **5**
(b) What are the advantages of gaseous fuels over the solid fuels? **3**
(c) What are anti-knock compounds? Give two examples. **2**

Q5 (a) What are super conductors? What are their types? **4**
(b) What is a varnish? What are the characteristics of a good varnish? **4**
(c) Explain the mechanism of thin film lubrication. **2**

Q6 (a) Give the preparation and uses of following polymers: **6**
(i) PVC (ii) Teflon (iii) Buna-S
(b) What is air pollution? What are its main sources? How can we prevent it? **4**

Q7 (a) Calculate the gross calorific value of coal (using Dulong's formula) having the following percentage composition. **3**
C = 80% , H = 7% , O = 3% , S = 3.5% , N = 2.1% , and Ash = 4.4%
(b) Explain addition and condensation polymerization with suitable example in each case. **4**
(c) Explain green house effect and global warming. **3**

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