

DON BOSCO INSTITUTE OF TECHNOLOGY, DBIT, MUMBAI 400070

BASIC HUMANITIES AND SCIENCES

ACADEMIC YEAR EVEN SEMESTER 2014-2015

APPLIED CHEMISTRY-II (MECH-A, COMPS, EXTC)

INTERNAL ASSESSMENT TEST I

Maximum marks=20 Duration=1 hour Date :26.02.2015

Atomic weights: C = 12, O = 16, H = 1, N = 14, S = 32, Ba = 137

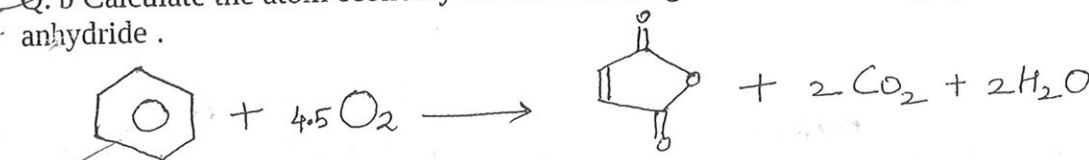
Attempt the following questions as per the instructions given.
Bracket to the right indicates the Marks allotted to the question

Q.I Answer any three

(3*3=9)

Q. a Assuming X g as increase in weight of potash bulb and Y g as increase in weight of calcium chloride tube during ultimate analysis using combustion apparatus, for W g of coal sample, derive the formula for % C(carbon) and % H(hydrogen)

Q. b Calculate the atom economy for the following reaction involving synthesis of maleic anhydride.



Q. c Give the classification of composites. How will you classify :
(i) concrete (ii) glass fibre reinforced plastics (iii) plywood.

Q. d An air dried sample of coal weighing 2.5 gm was taken for volatile matter determination. After losing volatile matter the coal sample weighed 1.5 gm. If it contains 5% moisture, find the percentage of volatile matter.

Q.II Explain in detail all the steps involved in Powder Metallurgy.

(4*1=4)

Q.III Write a short note on Structural Composites

(3*1=3)

OR

Q.III

a. Mention any two drawbacks of Plain Carbon Steel

(1+2=3)

(1*1=1)

b. Write the composition, properties, uses of Gun metal or Duralumin.

(2*1=2)

Q.IV Write down the conventional & greener method of synthesis for Adipic acid

OR Indigo. Also mention the Green Chemistry principles involved in the greener route of synthesis.

(4*1=4)

