NCC-003-045402 Seat No. _____

B. Voc. (Chemical Technology) (Sem. IV) (CBCS) Examination

April / May - 2017

BVCT - 402 : Chemistry of Polymer & Composite Materials

Faculty Code : 003
Subject Code : 045402

Time : $2\frac{1}{2}$ Hours] [Total Marks : **70**

Instructions : (1) All questions are compulsory and carry equal marks.

(2) Draw diagram and/or scheme wherever necessary.

1 (A) Answer the following questions : **10**

(1) Enlist any two applications of polyvinyl chloride.

(2) Define particle reinforced composite.

(3) Camphor is added to the pharmaceutical polymers as a _____ (preservative, plasticizer, antistatic agent)

(4) Which monomer is used in the preparation of Nylon-6?

(5) Define composite.

(6) Define fabric reinforced composite.

(7) Which polymer is used in adhesives like Fevicol?

(8) Give the structure of vinyl chloride.

(9) Give any two examples of semi-synthetic polymers.

(10) When used as filler in polymers, which of the following provides better thermal stability?

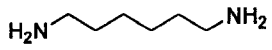
(B) Answer the following multiple choice questions : **20**

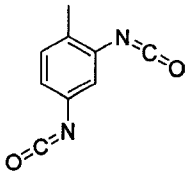
(1) Classify Polymer Colorants with example.

(2) Give the difference between Bakelite and novalac.

(3) Explain applications of Phenol-formaldehyde.

(4) Give the name of following monomers :

1. 

2. 

(5) What is addition polymerization? Give any one example.

(6) Explain both classification of fillers with examples.

(7) Explain the role of plasticizers in polymers.

(8) Enlist any four plasticizers.

(9) Give application of composite material.

(10) Discuss autoclave moulding.

2 Answer any 4 out of the following 6 questions : **20**

(1) Write a detailed note on Fire Retardants for polymers.

(2) Give synthesis and use of Glyptal.

(3) Write a note on role of (i) Wood powder and (ii) Asbestos, as fillers in polymers.

(4) Describe anionic polymerization with example.

(5) Explain synthesis and applications of polystyrene.

(6) Discuss fabric manufacturing methods.

3 Answer any 4 out of the following 6 questions : **20**

(1) Define, classify and exemplify Polymer Additives.

(2) Give synthesis, use and disadvantage of PHBV

(3) Describe Kevlar in composite with its use.

(4) Discuss in detail carbon fibre and aramid fibre with chemical reaction.

(5) Explain condensation polymerization with illustration.

(6) Describe cationic polymerization with example.
