

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI  
(MID SEMESTER EXAMINATION)**

**CLASS: BE**  
**BRANCH: CHEM. ENGG. PLASTICS & POLYMER**

**SEMESTER: IV**  
**SESSION : SP/2019**

**SUBJECT: PC4003-POLYMER TECHNOLOGY-I**

**TIME: 1.5 HOURS**

**FULL MARKS: 25**

**INSTRUCTIONS:**

1. The total marks of the questions are 30.
  2. Candidates may attempt for all 30 marks.
  3. In those cases where the marks obtained exceed 25 marks, the excess will be ignored.
  4. Before attempting the question paper, be sure that you have got the correct question paper.
  5. The missing data, if any, may be assumed suitably.
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- Q1 (a) What is plasticiser? How does it work? [2]  
(b) Describe auto-oxidation cycle of polymers. [3]
- Q2 (a) Discuss how hindered phenols work as primary antioxidant. [2]  
(b) Classify filler types with suitable examples in each category. [3]
- Q3 (a) How are Nylon 11 and Nylon 12 synthesized? [2]  
(b) What will you do to solve the problem of shrinkage in nylon? [3]
- Q4 (a) Describe the theory behind Nylon 66 manufacturing. [2]  
(b) What is polyimide? What are the advantages of polyimide? [3]
- Q5 (a) Discuss HIPS manufacturing technology. [2]  
(b) How can you manufacture electrical insulation grade of PVC? Discuss its composition. [3]
- Q6 (a) Enlist the bottle-necks of PMMA sheet manufacturing. [2]  
(b) How PVOH is manufactured? [3]

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