

SECTION-C

Note: Long answer type questions. Attempt any three questions. 3x10=30

- Q.3 Define and explain the role of heat stabilizers and flame retardants in the compounding of polymers.
- Q.4 Describe the formulation and role of various ingredients in the compounding of thermoset materials.
- Q.5 With neat and labelled sketch, explain the construction and working of Banbury mixer.
- Q.6 Explain the construction and working of kneaders.
- Q.7 Explain the compounding of PVC for semi-rigid applications.

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**5th Sem. / Plastic, Chem. Engg.
(Spl. Polymer Engg.)**

Subject : Polymer Compounding and Formulation

Time : 3 Hrs.

M.M. : 100

SECTION-A

Note: Very Short Answer type questions. Attempt any 15 parts. (15x2=30)

- Q.1 a) Define compounding.
b) State the role of extenders.
c) Name any two diluents.
d) Define additive with two examples.
e) State the function of colourants in polymers.
f) Name two dyes.
g) State the role of antitermites.
h) Can asbestose be used as additive?
i) Name two UV stablisers.
j) State the role of fillers in polymer

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127055/032255

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127055/032255

compounding.

- k) Name two surface property modifiers.
- l) Define thermoplastics.
- m) Define thermosets.
- n) Draw neat sketch of two roll mill.
- o) Define paste with one example.
- p) State the applications of rigid PVC.
- q) Name two high performance mixers for pastes.
- r) Define mould release agents.

SECTION-B

Note: Short answer type questions. Attempt any ten parts
10x4=40

- Q.2
- i) Explain the principle of compounding.
 - ii) "Compounding enhances the application properties of polymers". Justify.
 - iii) Explain the role of lubricants in compounding.

- iv) Explain the difference between antislip and antiblock additives.
- v) Explain the role of pigments in compounding.
- vi) Explain the role of blowing agents in polymer compounding.
- vii) State the role of plasticisers in polymer compounding.
- viii) Explain the role of any two ingredients in the compounding of thermoplastics.
- ix) Draw neat sketch of ribbon blender.
- x) Draw neat sketch of high speed mixer.
- xi) Explain the working of mixer extruder.
- xii) Explain the significance of mixing of solids and pastes in polymer compounding.
- xiii) Explain the working of batch mixer.
- xiv) Explain the construction of a dispersor.
- xv) Explain compounding of a polymer for flexible applications.

(2) 127055/032255

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