

- Q.26 Discuss flame retardant additives with examples.
 - Q.27 Discuss blowing agent additives and their types.
 - Q.28 Draw label diagram of Banbury Mixer.
 - Q.29 Explain construction and working of two roll mill.
 - Q.30 Discuss construction and working Disperser
 - Q.31 Discuss compounding of any two plastics for rigid application.
 - Q.32 Write short note on mould release agent.
 - Q.33 Explain High speed mixer.
 - Q.34 Explain Principle of compounding.
 - Q.35 Discuss role of various ingredients in any thermosets formulation.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Explain construction and working:

 - Ribbon blender.
 - Mixer extruder

Q.37 Discuss

 - Anti-ageing additives
 - Anti oxidants with example

Q.38 Write short note:

 - Difference between mixing and compounding
 - Mixing of solid and pastes

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Plastic Engineering
Subject:- Polymer Compounding and Formulation

Time : 3Hrs.

M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 Which of the following is a heat stabilizer?

 - a) White lead
 - b) PbO
 - c) ZnO
 - d) Metallic oxides

Q.2 In liquid-liquid operations, centrifugal force is employed in_____.

 - a) Settling
 - b) Filtration
 - c) Sedimentation
 - d) Both setting and filtration

Q.3 _____ is an example of filler.

 - a) CaCO₃
 - b) Talc
 - c) Mica
 - d) All of them

Q.4 Carbon black is used in polymer compounding_____.

 - a) as a filler
 - b) as a colorant
 - c) as a stabilizer
 - d) All of them

Q.5 Anti oxidants are used in polymer as_____.

- a) To extend chains of polymer
 - b) to protect plastics from oxidation
 - c) to improve surface finish
 - d) None of these
- Q.6 _____ is used in mastication of rubber.
- a) Ribbon blender b) Disperser
 - c) two roll mill d) Banbury Mixer
- Q.7 Which among the following is a UV light absorber.
- a) Phosphate esters
 - b) Quaternary ammonium compounds
 - c) Glycol ester
 - d) Benzophenones
- Q.8 DOP stands for
- a) Di-octyl phthalates b) Di-octyl plastic
 - c) Di-octane phthalates d) None of the above
- Q.9 _____ prevent moulded article from sticking to the mold surface.
- a) Catalyst b) Fillers
 - c) Mold release agent d) Anti static agents
- Q.10 HALS stands for _____.
- a) Hindered Amine light stabilisers
 - b) Hindered Aluminium Stabilisers
 - c) Hindered Ammonia last stabilisers
 - d) None of these

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 _____ is an example of blowing agent.
- Q.12 Name two impact modifiers used in plastic industry.
- Q.13 Give an example of lubricant used in plastic compounding.
- Q.14 Name anyone anti slip agent.
- Q.15 _____ is an example of mould release agent.
- Q.16 Name any one application of ribbon blender.
- Q.17 Plasticizers are also referred to as chain extenders. (T/F)
- Q.18 Name any one rigid application of PVC
- Q.19 _____ is an example of flame retardant.
- Q.20 Give an example of solvent and diluents used in plastic compounding.

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 How will compounding affect the properties of polymers.
- Q.22 Explain fillers and their types with examples.
- Q.23 Write short note on Solvents and diluents.
- Q.24 Explain dye and pigments with suitable example.
- Q.25 Discuss anti block and anti slip agents with example.