(Following Paper ID and Roll No. to be filled in your Answer Books)	
Paper ID : 187613	Roll No.

B.TECH.

Theory Examination (Semester-VI) 2015-16

ADDITIVES & COMPOUNDING

Time : 3 Hours   *Max. Marks : 100*

Section-A

Q1. Attempt all parts. All parts carry equal marks. Write answer of each part in short.   [2×10=20]

    (a)   Define additives with examples.

    (b)   What is active filler?

    (c)   Define slip agent with example.

    (d)   What do you mean by toughening agent?

    (e)   List the various additives used for the flame-retardant property.

(f)   Define master batch.

(g)   Define compounding.

(h)   Define blend with examples.

(i)   Why PVC is compounded with heat stabilizers.

(j)   What do you mean by Inhibitors?

Section-B

Q2. **Attempt any five questions from this section.**

[10×5=50]

(a)   What are nanofillers? What are the advantages of nanofillers in plastics?

(b)   What do you mean by plasticizers? Discuss the functions and types of plasticizers.

(c)   Explain which types of additive used to reduce the friction of molten polymer and also discuss its types.

(d)   What are antioxidants? Explain their mechanism of actions with polymers.

(e)   What are the advantages of using heat stabilizers and UV stabilizers?

(f)   Which are the equipment used for the melt mixing process. Explain the twin screw extruder with neat sketch.

(g)   Explain selection criteria of additives in compounding and also discuss the role of additives in polymer properties.

(h)   What is the function of colorants? Explain the types of colorants.

Section-C

Note: Attempt any two questions from this section.

[15x2=30]

Q3.   What are the polymer blend and alloys? Mention the advantages of polymer blends over the conventional polymeric materials.

Q4.   Explain compounding of polymers? What are the functions of different ingredients in PVC compounding?

(3)   P.T.O.

Q5. Write shorts notes on any two of the following :

(a) Fire/ flame-retardant

(b) Two roll mill

(c) Mould releasing agents