17653

16117

3 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

(3) Figures to the right indicate full marks.

(4) Assume suitable data, if necessary.

(5) Abbreviations used convey usual meaning.

Marks

1. Attempt any FIVE of the following: **20**

a) Write any four advantages of reclaimed rubber.

b) Write any four properties and applications of PU elastomer.

c) Define mastication. Why is it done ?

d) Explain with a labelled diagram working of hot feed extruder.

e) Describe a method to prepare a rubber gasket.

f) Name any four components of tyre and state their role

g) Explain the construction of standard diagonal tyres.

2. Attempt any TWO of the following: **16**

a) Describe the preparation, and explain typical properties of poly butadience rubber.

b) (i) Write full form of EPDM.

(ii) Write important properties and applications of EPDM rubber.

c) Describe :

(i) Skimming

(ii) Topping

P.T.O.

Marks

3. Attempt any TWO of the following: **16**

a) Describe preparation of :

(i) neoprene

(ii) styrene - butadience rubber by any one commercial method.

b) (i) What is 'Natural rubber' ? Write applications of natural rubber.

(ii) Name a thermosetting elastomer. State its characteristics.

c) (i) Define raw rubber. Describe the stages in raw rubber.

(ii) Write typical recipe of surgical foam. Where are they used ?

4. Attempt any TWO of the following: **16**

a) Explain four important properties and four important applications of silicone rubber.

b) Define vulcanisation. Explain any two methods of vulcanisation.

c) (i) Write the sources of natural rubber.

(ii) Explain characteristics of TSR.

5. Attempt any TWO of the following: **16**

a) Describe method to check plasticity and viscosity of a rubber.

b) (i) Explain the tyre building process.

(ii) Describe construction of a radial ply tyre.

c) Explain :

(i) Use of vulcanisation accelerators.

(ii) Classification of accelerators.

Marks

6. Attempt any FOUR of the following: **16**

a) Compare : natural and synthetic rubbers.

b) State in general, properties and applications of acrylic rubber.

c) Explain non-sulfur vulcanisation with an example and reaction.

d) Describe working of a ram extruder of rubber with a labelled diagram.

e) Outline, a manufacturing process of rubber gloves.

f) Explain the construction of bias belted tyre.

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