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Roll No. ....

**EIGHTH SEMESTER**

**B.E. (PT)**

**MID SEM EXAMINATION**

**March**

**2007**

**PT-411 TYRE TECHNOLOGY**

*Time: 1 Hour 30 Minutes*

*Max. Marks : 20*

**Note :** Answer **ALL** questions.

Assume suitable missing data, if any.

- 1 Give brief answers to any six of the following: **1x6=6**
- [a] In what way stop and go city driving is different than steady state highway driving?
  - [b] Why do softer compounds provide more traction than harder compounds?
  - [c] Why was square woven linen fabric replaced by bias plies of cord fabric in the carcass of a tyre?
  - [d] Which type of cords cause flat spotting and why?
  - [e] Why do bias tyres wear faster than radial tyres?
  - [f] Should the tyres be under inflated or over inflated while driving through the desert? Why?
  - [g] Why were balloon shape cross section tyres better than horse shoe shape cross section.
- 2[a] Sketch the cross section of a tyre showing five basic components followed by description of their functions. **3**
- [b] What is (a) Aspect ratio and (b) Deflection of tyre. **2**
- 3 Write short notes on any **THREE** of the following: **3x3**
- [a] Tyre sizing and designation
  - [b] Desirable tyre properties
  - [c] Importance of CAFÉ
  - [d] A B C's of traction.

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**EIGHTH SEMESTER**

**B.E. (PT)**

**MID SEM EXAMINATION**

**March**

**2007**

**PT-412 MOULD & DIE DESIGN**

**Time: 1 Hour 30 Minutes**

**Max. Marks : 20**

**Note :** Answer **THREE** questions.

Question No. **ONE** is compulsory.

Assume suitable missing data, if any.

- 1 Draw neatly the Mould Housing for an Injection Mould. Label its different parts. Also discuss the application of each part. 7
- 2[a] Describe the function of Gate. Explain any four with neat sketches. 3
- [b] What are different type of fits. Explain their application in Mould by taking suitable example. 3½
- 3[a] Briefly discuss various type of machining processes being used in the manufacturing of mould. Explain EDM process in detail. 4
- [b] What is the criterion for selecting the materials for mould. Give the list of material being used for mould. 2½
- 4[a] What do you understand by Runner? Explain their type with merits and demerits. 3½
- [b] Define the term Runner Balancing. Explain its application with neat sketches. 2
- [c] Show different surface finish symbols used-mould design with their significance. 1

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**EIGHTH SEMESTER**

**B.E. (PT)**

**MID SEM EXAMINATION**

**March** **2007**

**PT-413 ION EXCHANGE MATERIALS**

**Time: 1 Hour 30 Minutes**

**Max. Marks : 20**

**Note :** Question No. 1 is compulsory.

Answer any **TWO** questions from the rest.

Assume suitable missing data, if any.

1 Define the following terms

- |                             |                                 |
|-----------------------------|---------------------------------|
| (i) Ion exchange material   | (ii) Liquid ion exchanger       |
| (iii) Ion exchange capacity | (iv) Counter ions               |
| (v) Co-ions                 | (vi) Matrix                     |
| (vii) Swelling              | (viii) Amphoteric Ion exchanger |

1x8

2 Give brief on any three of the following

- (i) Styrene-divinyl benzene copolymers
- (ii) Mineral Ion Exchangers
- (iii) Synthetic inorganic ion exchangers
- (iv) Molecular sieves.

2x3=6

3[a] What do you understand with the suspension polymerization? 3

[b] Give details of Pearl polymerization regarding the preparation of ion exchanger beads. 3

4[a] Write about the preparation of any two condensation polymers for their use as ion exchangers. 4

[b] How do you convert a polymeric material into a cation exchanger? 2

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**EIGHTH SEMESTER**

**B.E. (PT)**

**MID SEM EXAMINATION**

**March- 2007**

**PT-414 INDUSTRIAL WASTE MANAGEMENT**

*Time: 1 Hour 30 Minutes*

*Max. Marks : 20*

**Note :** Answer any **FOUR** questions.  
Assume suitable missing data, if any.

- 1 Discuss the importance of clean technologies in industrial waste management giving suitable examples. **5**
- 2 Define industrial waste waters, its importance, its typical characteristics and its comparison to other waste waters. **5**
- 3 How industrial waste waters are classified? Why should be industrial wastes be grouped? How this would help in better waste management? **5**
- 4 Discuss what multiple lines of defence can be adopted to manage industrial wastes. Define & differentiate between degradable, non degradable & biologically accumulative wastes with examples. **5**
- 5 Write short notes on any **FOUR** of the following: **5**
  - (i) Importance & salient features of water pollution control act 1924.
  - (ii) Causes of industrial pollution.
  - (iii) Specific tests performed on industrial wastes.
  - (iv) Toxic wastes & there limits in drinking water.
  - (v) Effects of industrial wastes on treatment plants.