

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

## GUJARAT TECHNOLOGICAL UNIVERSITY

BE SEM-VIII Examination May 2012

Subject code: 182601

Subject Name: Tyre and Tube Technology

Date: 10/05/2012

Time: 10.30 am – 01.00 pm

Total Marks: 70

### Instructions:

1. Attempt all questions.
2. All notations used have conventional meaning.
3. Draw the figure wherever necessary.
4. Figures to the right indicate full marks.

- Q.1** (a) Draw the cross section of tyre showing major components. **04**  
(b) Answer the following **10**
- (i) Define the term: Pneumatic tyre
  - (ii) What is meant by cast tyre?
  - (iii) “The tyre industry can help in fuel saving of vehicle”. Justify the statement.
  - (iv) Write the importance of crown angle in bias tyre design.
  - (v) List the properties required in ply compound.
- Q.2** (a) Compare radial Vs bias tyre highlighting the advantages of radial tyre. **07**  
(b) Discuss different raw materials used for manufacturing tyre. **07**
- OR**
- (b) (i) Explain the process of bead building in tyre manufacturing. **04**  
(ii) Write a note on tyre building drums. **03**
- Q.3** (a) Describe the tyre building method for radial tyre. **07**  
(b) Discuss on tyre nomenclature and dimensions. **07**
- OR**
- Q.3** (a) Explain tyre curing process. **07**  
(b) List bead, carcass, tread and sidewall imperfections observed on tyre. **07**
- Q.4** (a) Explain the four steps involved in defining a tyre structure for designing a tyre. **10**  
(b) Explain the plunger testing and thermocouple check testing done on tyre. **04**
- OR**
- Q.4** (a) Discuss on four basic tread patterns. **07**  
(b) Write a note on tyre uniformity and ride comfort test. **07**
- Q.5** (a) Analyze the performance of tyre with respect to tyre footprint. **07**  
(b) Explain the manufacturing process of automobile tube. **07**
- OR**
- Q.5** (a) Analyze the tyre performance with respect to rolling resistance. Also write about the methods for determining rolling resistance. **08**

(b) Answer the following

- (i) List the defects observed on tyre flap.
- (ii) Give the outline of process of manufacturing camel back.
- (iii) What is meant by 28" X 1½" and 4/14 in cycle tyre?

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