

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**ME - SEMESTER-1 (NEW) EXAMINATION – WINTER 2018**

**Subject Code: 3711411****Date: 03/01/2019****Subject Name: Value Engineering****Time: 02:30 PM To 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full mark

<b>Q.1</b>	<b>(a)</b> Explain the following terms with suitable examples: Value Engineering, Value Analysis, and Value Management.	<b>07</b>
	<b>(b)</b> Discuss the origin of value engineering concept during World War II.	<b>07</b>
<b>Q.2</b>	<b>(a)</b> Discuss the relevance of VE to scenario of Indian construction industry and development of infrastructure projects in India.	<b>07</b>
	<b>(b)</b> Justify the following statement with a suitable example: A value analysis is multidiscipline team approach and not exercised by a single practitioner.	<b>07</b>
<b>OR</b>		
	<b>(b)</b> Enlist the important qualities of leader and members of VE team as team approach is essential in VE.	<b>07</b>
<b>Q.3</b>	<b>(a)</b> Define Job Plan. Explain 5-phase job plan in value engineering study.	<b>07</b>
	<b>(b)</b> Define and explain the terms with casual examples: Use value, Esteem value, Exchange value & Cost value.	<b>07</b>
<b>OR</b>		
<b>Q.3</b>	<b>(a)</b> Explain the importance and course of action to be accomplished in the information phase of VE job plan.	<b>07</b>
	<b>(b)</b> Define following terms with respect to Value Engineering: Function, Cost of Function, and Worth of Function	<b>07</b>
<b>Q.4</b>	<b>(a)</b> Explain procedure of constructing FAST diagram. Also explain the functions which are shown horizontally and vertically in the diagram.	<b>07</b>
	<b>(b)</b> Define Creative Thinking. Enlist and explain different types of people have been identified as creative individuals.	<b>07</b>
<b>OR</b>		
<b>Q.4</b>	<b>(a)</b> Enlist the maximum possible functions served by following: (in the prescribed format of function analysis) (a) Street Light Pole (b) Paver blocks	<b>07</b>
	<b>(b)</b> Explain how “necessity” and “competition” stimulate the creativity? Enlists any other such factors if existing.	<b>07</b>
<b>Q.5</b>	<b>(a)</b> State and explain the importance of life cycle cost concept in support of VE.	<b>07</b>
	<b>(b)</b> Differentiate between: Matrix Cost Model and Functional Cost Model.	<b>07</b>
<b>OR</b>		
<b>Q.5</b>	<b>(a)</b> Discuss the life cycle cost approach in VE step by step with example of a proposed commercial construction project by a client.	<b>07</b>
	<b>(b)</b> Write various types of costs and complexity of costs that are to be considered while formulating any cost model.	<b>07</b>