

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER-V -EXAMINATION – WINTER 2018

Subject Code: 3650011

Date: 28/11/2018

Subject Name: Software Quality and Assurance

Time: 10.30 am to 1.00 pm

Total Marks: 70

Instructions:

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

- Q.1 (a)** Attempt the following:
1. Discuss any two characteristics of SQA environment. **02**
 2. Identify two major software risk items. **02**
 3. Discuss what is needed to prepare a training and updating program. **03**
- (b)** Attempt the following
1. Discuss software quality assurance and its objectives.
 2. Distinguish between software errors, software faults and software failures. **02**
 3. Distinguish and explain the differences between software quality assurance and quality control. **03**
- Q.2 (a)** Discuss McCall's factor model tree. **07**
- (b)** Explain the two contract review stages and identify the difficulties in performing a major contract review. **07**
- OR**
- (b)** Explain the direct and indirect objectives of the review methodologies. **07**
- Q.3 (a)** Explain the difference between procedures and work instructions. **07**
- (b)** Discuss the benefits of preparing development and quality plans for small projects. **07**
- OR**
- Q.3 (a)** Describe the various software development models and discuss the differences between them. **07**
- (b)** List the main types of automated software tests and discuss it. **07**
- Q.4 (a)** Describe the concepts of black box testing and white box testing, and discuss their advantages and disadvantages. **07**
- (b)** Explain the different aspects of verification, validation and qualification for quality assurance activities. **07**
- OR**
- Q.4 (a)** Discuss the differences between the various testing strategies, their advantages and disadvantages. **07**

- (b) Discuss the sources for test cases and their advantages and disadvantages 07
- Q.5 (a) Explain how software quality metrics are categorized. 07
- (b) Discuss estimated cost of software quality model. 07
- OR**
- Q.5 (a) Explain the main contribution of templates to software quality assurance. 07
- (b) Attempt the following : 07
1. Describe the general principles underlying quality management according to ISO 9000-3.
 2. List the main components of a certification program.
