



## VII SEMESTER B.TECH. (INFORMATION TECHNOLOGY/COMPUTER & COMMUNICATION ENGINEERING)

END SEMESTER EXAMINATIONS, NOVEMBER 2017

SUBJECT: PROGRAM ELECTIVE – III : SOFTWARE QUALITY ENGINEERING [ICT 443]

REVISED CREDIT SYSTEM  
(21/11/2017)

Time: 3 Hours

MAX. MARKS: 50

### Instructions to Candidates:

- ❖ Answer ANY FIVE FULL questions.
- ❖ Missing data, if any, may be suitably assumed.

- 1A. Explain user-centered design process with a neat diagram. 5
- 1B. With suitable example explain the conventions to be followed for the following
- i. Function declaration
  - ii. Macros
- Note: Consider the MISRA-C rules & coding standards. 3
- 1C. What are the constraints to be considered in embedded system design? 2
- 2A. Change management is the handling of change requests that leads to the creation of a new version of software. Explain the process of change control with a neat diagram. 5
- 2B. Identify the lines of code which violates MISRA –C rules. Justify the identified errors.

Note: Do not take the coding style into consideration.

```
#include "misra.h"
static SI_32 i;
static SI_32 func21 ( SI_32 j );
...
..
func21( SI_32 j ){ /*name of the function*/
SI_32 i = 1;
if ( i > 3 ) {
SI_32 j = 4;
}
i = j;
..
return i;
}
```

- 2C. What are the constraints to be considered in embedded system design? 2
- 3A. Analyze and evaluate the “Facebook” application with respect to user experience honeycomb. 5
- 3B. Software Architecture serves to be a vehicle for stakeholder communication. Justify this statement. 3

3C. Explain in brief about industrial Domain Knowledge.	2
4A. Explain with a neat diagram test driven development lifecycle.	5
4B. With a neat diagram explain the parts of quality attribute scenario.	3
4C. Explain the following MISRA rules with a suitable example. <i>"While using enums, the first enum constant should have a non-zero value, or the first constant should indicate an error."</i>	2
5A. Explain with a neat diagram, the different activities in change management.	5
5B. Explain how to apply qualimetry activities along the SDLC lifecycle?	3
5C. Differentiate between Assertions and Exceptions in the context of SQE with suitable example.	2
6A. Describe briefly the steps required for Failure Mode and Effect Analysis.	5
6B. With a suitable example explain the following MISRA rule <i>"Only those escape sequences that are defined in the ISO C standard shall be used."</i>	3
6C. How are clean codes different from efficient codes?	2