Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

II SEMESTER M.TECH (SOFTWARE ENGINEERING)

END SEMESTER EXAMINATIONS, APRIL 2018

SUBJECT: SOFTWARE QUALITY ENGINEERING [ICT 5221]

REVISED CREDIT SYSTEM
(17/04/2018)

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates

- Answer ALL questions.
- Missing data may be suitably assumed.

1A. Illustrate with a neat diagram the universal model of user interface to show how the system's content and functionality are ordered and categorized. 5

1B. Identify and write the MISRA C++ rule which is violated in the following code snippets. Write the correct code in compliance with MISRA C++ rule.

```
class B1
{
public:
        int32_t count;
        void foo ();
};
class B2
{
public:
        int32_t count;
        void foo ();
};
class D : public B1, public B2
{
public:
        void Bar ()
        {
        ++count;
        foo ();
        }

};
```

3

1C. Differentiate software quality control and software quality assurance. 2

2A. Explain with suitable illustration the five different methods of analysis phase in UX process. 5

2B. Explain the three dimensions of quality factors that improve software product quality. 3

2C. What are the external and internal quality characteristics of Software? 2

3A. How are requirements coverage, test case slip, total execution lead time slip, test execution lead time slip and early defect detection test metrics computed? 5

3B. Explain the important factors that a test manager should take into account when estimating the costs of testing. 3

3C. Explain the need of six sigma methodologies. 2

4A. With a suitable illustration explain the Agile lifecycle process. Bring out the advantages of Agile testing. 5

4B. Identify and write the MISRA C rule which is violated in the following code snippets. Write the correct code in compliance with MISRA C rule.

```
void myfunc ( int16_t * param1, const int16_t * param2, int16_t * param3)
{
  *param1 =  *param2 + * param3;
return;
}
```

4C. What are the features of a clean code? Explain. 3 2

5A. With the help of a neat diagram explain the top down approach of FMEA. Write the steps in calculating relative risk in FMEA. 5

5B. What is black box testing? Explain two different types of black box testing. 3

5C. What is the need for software configuration management (SCM). Explain the SCM process. 2