Registration no: | | | | | | | | | | |

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MCA
MCA403

4th Semester Regular Examination – 2017-18
SOFTWARE ENGINEERING
Branch: MCA
Time: 3 Hours
Max marks: 100
Q Code : C791

Answer Question No.1 and 2 which are compulsory and any four from the rest.

The figures in the right hand margin indicate marks.

Answer all parts of a question at a place.

Q1 **Answer the following questions:** **(2 x 10)**

a) Write down at least two advantages of algebraic specification.
b) State five symptoms of the present software crisis.
c) What is the necessity for developing use case diagram?
d) What are the main advantages of using CASE tools?
e) Difference between Verification and validation of a software process?
f) Distinguish between error and failure.
g) What is architectural Design and how it is differ from detailed design?
h) What is the difference between ISO9000 and ISO9001?
i) What do you mean by phase containment error?
j) What are the different levels of SEC CMM Model?

Q2 **Answer all questions** **(2x10)**

a Software is a set of ——————— that when executed provide desired function and performance.
b Software is a process and ———————.
c The definition phase of software engineering includes tasks such as system engineering, software project planning and ———————--
d In Water fall model, the phases involved in the software development are organized in———————.
e Function-oriented design is comprised of many smaller sub-systems is known as, Functions. Yes or No
f Software project manager is engaged with software management activities. He is responsible for _____ .
g Classes communicate with one another via _____ .
h Software is not considered to be collection of executable programming code, associated libraries and documentations. True/False

i Brute force, backtracking, cause elimination are strategies used in art of debugging. Yes/No

j When elements of module are grouped because the output of one element serves as input to another element and so on, it is called _____ .

Q3 **a)** Suppose you are developing a software product in the organic mode. You have estimated the size of the product to be about 100,000 lines of code. compute the nominal effort and the development time. **(7)**

b) Difference among basic COCOMO model, intermediate COCOMO model and complete COCOMO model. **(8)**

Q4 **a)** Briefly explain about Humphrey's Capability Maturity Model and its different levels? **(7)**

b) What do you mean by balancing a DFD? Illustrate your answer with suitable example **(8)**

Q5 For the following c program estimate the Halstead's length and volume measures. compare Halstead's length and volume measures of size with the LOC measure. **(15)**

/* program to calculate the Average of three numbers */

```
 Main()
{
 int a,b,c, avg;
 Scanf(" %d %d %d ", &a, &b, &c ) ;
 Avg =(a+b+c)/3 ;
 Printf(" avg=%d", avg);
 }
```

Q6 **a)** Discuss how the reliability changes over the lifetime of a software product and a hardware product? **(7)**

b) .What do you mean by software reliability and explain the six metrics to measure software reliability? **(8)**

Q7 **a)** Draw the schematic diagram to represent the Spiral model in software development life cycle. **(10)**

b) Discuss the stages through which the quality system paradigm and the quality assurance methods have evolved the years? **(5)**

Q8 **Write short notes(Any THREE) on the following** **(3 x 5)**

a) Cohesion and coupling.

b) Expert judgment technic and Delphi cost estimation technic.

c) Integration testing vs System testing.

d) Object oriented design vs function oriented design.