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H-6043

M.Sc. (IVth Semester) Examination, 2022

INFORMATION TECHNOLOGY

(System Design and Software Engineering)

Time Allowed : Three Hours

Maximum Marks : 70

Note : Attempt all sections.

SECTION - A

Note : Each question carries one mark. **10**

Q. 1. Objective type (solve any ten) :

(i) Software engineering is a _____.

(ii) The step-by-step instructions that solve a problem are called _____.

(iii) Structured analysis mainly depends on data flow diagrams and _____.

(iv) Audit, Reliability, Security are integral to _____.

(v) In DED, processes that have inputs but produce no output are called _____.

(vi) A COCOMO model is :

(a) Common cost estimation model

(b) Constructive cost estimation model

(c) Complete cost estimation model

(d) Comprehensive cost estimation model

(vii) SRS is also known as specification of :

(a) White box testing

(b) Stress testing

(c) Integrated testing

(d) Black box testing

(viii) Requirements can be refined using :

(a) The waterfall model

(b) Prototyping model

(c) The evolutionary model

(d) The spiral model

(ix) Which is not a step of requirement engineering ?

(a) Requirements elicitation

(b) Requirements analysis

(c) Requirements design

(d) Requirements documentation

(x) The worst type of coupling is :

(a) Data coupling

(b) Control coupling

(c) Stamp coupling

(d) Content coupling

(xi) Pseudocode can replace :

(a) Flowcharts

(b) Structure charts

(c) Decision table

(d) Cause-effect graphs

(xii) The problem that threatens the success of a project but which has not yet happened is :

(a) Bug

(b) Error

(c) Risk

(d) Failure

SECTION - B

Note : Attempt any five questions. Each question carries 2 marks. **10**

Q. 2. Write short notes (very short answer in 25-30 words only) :

(1) Explain the types of system.

(2) Explain the data dictionary.

(3) Explain the software product.

(4) Explain the process oriented design.

(5) Explain the software design and project planning.

(6) What is specification tools ?

(7) Define the debugging and reliability analysis.

SECTION - C

Note : Attempt any five questions. Each question carries 4 marks. **20**

Q. 3. Write short answer in 250 words :

(1) What is system ? Explain the characteristics and elements of system.

(2) What is a Gantt charts ? Explain the system model with diagram.

(3) What is software ? Explain the software engineering and end user development approaches.

(4) Define the constrained design. Explain the object oriented design.

(5) What do you mean by software quality assurance ? Explain the types of software testing.

(6) What is DFD ? Explain the system flow chart with diagram.

(7) Define the integrating software. Explain the project monitoring and controls.

SECTION - D

Note : Attempt any three questions. Each question carries 10 marks. **30**

Q. 4. Write essay type answer (with more than 500 words) :

(1) What is operational and economic feasibilities ? Explain the system development life cycle with diagram.

(2) What is decision tree and tables ? Explain the input and output form design methodologies with diagram.

(3) What is the role of case tools ? Explain the re-engineering legacy system and coding standards.

(4) Define the program complexity analysis ? Explain the software quality and metrics with example.