2013

Time: 3 hours

Full Marks: 80

Candidates are required to give their answers in their own words as far as practicable.

The figures in the margin indicate full marks.

Answer from both the Groups as directed.

Group – A

(Objective-type Questions)

Answer all questions.

1. Choose the correct answer of the following:  
   \[2 \times 10 = 20\]
   (a) The main activity of the design phase of the system life cycle is to:
       (i) Propose alternatives to the current system
       (ii) Understand the current system
       (iii) Develop and test the new system

UK – 13/2

(Turn over)
(iv) Replace the old system with the new one

(b) While constructing a data dictionary, the analyst considers:

(i) Each data flow in the DFD has one data dictionary entry

(ii) Definitions must be readily accessible by name

(iii) There should be no redundancy in the data definition

(iv) All of the above

(c) Which of the following is a graphic representation of the modules in the system and the interconnection between them?

(i) Pie chart

(ii) Flow chart

(iii) Structural chart

(iv) System chart
(d) Acceptance testing is:

(i) Running the system with line data by the actual user

(ii) Making sure that the new programs do in fact process certain transactions according to specifications

(iii) Is checking the logic of one or more programs in the candidate systems

(iv) Testing changes made in an existing or a new system

(e) Cost Benefit analysis:

(i) Evaluates the tangible and non-tangible factors

(ii) Compares the cost, with the benefits

(iii) Estimates the hardware and software cost

(iv) All of the above

(f) Which model of Software Life Cycle cannot handle risk?

(i) Prototype
(ii) Waterfall
(iii) Iterative
(iv) Spiral

(g) Third stage of SDLC is known as:
(i) Feasibility
(ii) Testing
(iii) Design
(iv) Implementation

(h) Main goal of 'Quality Assurance' is to:
(i) Set coding standards
(ii) Improve software project management
(iii) Reduce programmatic risks in developing the software
(iv) Specify correct action

(i) Coupling is a measure of:
(i) Strength of intra-modular connection
(ii) Strength of inter-modular connection
(iii) Both (i) and (ii)
(iv) None of these
(i) Which one is desired?

(ii) Low cohesion and low coupling

(iii) Low cohesion and high coupling

(iv) High cohesion and high coupling

Group – B

(Long-answer Type Questions)

Answer any four questions of the following:

1. Define software engineering. What are the characteristics of Software Products? What are the application areas of Software Engineering?

2. What are the principles to be followed while designing user interfaces? Discuss software reliability matrices along with their uses.

4. What is COCOMO? Explain its usefulness in software cost estimation. What are the types of projects categorized in COCOMO model?
5. Explain, in detail, the black box and white box testing. Distinguish between software validation and software verification.

6. Distinguish between the object oriented designs and function oriented design with proper examples. List the desirable characteristics of a good SRS document.


8. State and explain Cohesion and Coupling with suitable examples.

9. What is alpha and beta testing? Explain with example. Explain interface testing.

10. Write short notes on any four of the following:
    (a) Integration testing
    (b) Regression testing
    (c) Process based estimation
    (d) Software equation
    (e) Data dictionaries

UK – 13/2 (600) (6) BCA—III / 17 / 13