Specimen Paper A

Record your surname / last / family name and initials on the answer sheet.

**Specimen paper only 20 multiple-choice questions** – 1 mark awarded to each question. Mark only one answer to each question. There are no trick questions.

A number of possible answers are given for each question, indicated by either A. B. C. or D. Your answers should be clearly indicated on the answer sheet.

Pass mark is 13/20.

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**This qualification is regulated by Ofqual (in England).**
1 Which of the following statements is CORRECT?

A Compiled code must be translated before a machine can use it.
B Interpreted code can be executed directly by the computer’s CPU.
C Compilers translate code at run-time into machine instructions.
D Interpreted code must be translated into machine instructions.

2 Which type of algorithm has been used to order the list [7, 5, 2, 9] based on the following steps?

1) [7, 5, 2, 9]
2) [5, 7, 2, 9]
3) [5, 2, 7, 9]
4) [2, 5, 7, 9]

A Bubble sort.
B Merge sort.
C Shell sort.
D Random sort.

3 Which of the following describes the concept of a software design pattern?

A The change of a coding structure.
B A step-by-step process for performing an important activity.
C A re-usable solution that aids the development of software.
D A throwaway design solution.

4 What is ‘user research’ an activity of?

A Requirements analysis.
B Feasibility study.
C Project planning.
D Implementation (Deployment) planning.
5 Which of the following roles compiles, assembles and delivers source code into finished products?

A Software tester.
B Software developer.
C Software designer.
D Software release engineer.

6 Which of the following provides a target against which the performance of operational software is measured?

A Non-functional requirement.
B Service level.
C Retrospective meeting.
D Functional test specification.

7 A software developer has been asked by their manager to review the code of another developer. What aspect of team working does this activity illustrate?

A Decision making.
B Collaboration.
C Conflict resolution.
D Planning.

8 What is a functional requirement?

A The robustness that the software needs to adhere to.
B How quickly program code is successfully tested.
C The purpose that the software is intended to perform.
D How well the features of the software perform.
9. Which of the following are non-functional requirements?

a) The required hours of service for the software.
b) The ease with which the software needs to be used.
c) The manner in which the software needs to interface with other software.
d) The ease with which the software needs to be maintained.
e) The maximum time allowed to recover the software after failure.

A  a, b and c only.
B  b, d and e only.
C  b and c only.
D  a, d and e only.

10. Which of the following are TYPICAL outcomes of poor software requirements?

a) Late product delivery.
b) Low product quality.
c) Excessive rework.
d) Inflexible software architecture.

A  a, c and d only.
B  a, b and c only.
C  b, c and d only.
D  a, b and d only.

11. Which type of constraint ensures that software conforms with the Data Protection Act?

A  Legal.
B  Governance.
C  Business.
D  Ethics.

12. Which of the following is TYPICALLY captured as part of a persona?

A  Curriculum Vitae.
B  Motivations and frustrations.
C  Generalised demographics.
D  Personal responsibilities.
13  Which NoSQL database is **TYPICALLY** the **MOST** efficient for the storage and retrieval of densely connected, semi-structured domains?

A  Column store.
B  Graph.
C  Key-Value.
D  Document.

14  What is the **PRIMARY** aim of normalising a database?

A  Removing any tables with similar data.
B  Scanning a database and removing slack space.
C  Ensuring that data is not duplicated in multiple tables.
D  Editing the database to remove duplicate column names.

15  What is the impact of adopting coding standards?

A  It greatly increases productivity.
B  It provides a standard way of working.
C  It increases workload for the development team.
D  It will be easier to plan appropriate tests.

16  When defining a new set of coding guidelines for a project, what is the **BEST** approach to take?

A  Let them evolve during the first few project iterations.
B  Dictate a comprehensive set of rules from the start.
C  Let senior management decide on the conventions.
D  Dictate that all code must be commented.

17  Which of the following describes human computer interaction?

A  The way in which people use computers and the communication between them.
B  The projects that people use to manage change and to develop computer systems.
C  The ways in which people’s use of computers has developed through history.
D  The methods that people use to develop effective computer systems.
18 Which is a fundamental consideration for people with disabilities as defined by the Web Accessibility Initiative (WAI)?

A Text can be reduced in a visual, oral or physical way.
B Every feature must be capable of working by keyboard input alone.
C Maximise compatibility with current and future user tools.
D Audio volume can be adjusted with voice control.

19 What is the practice of defensive programming?

A Ensuring all source code is comprehensively commented to allow for easy transition between developers.
B Anticipating failures by adding supporting code to detect, isolate, and if possible recover from the failure.
C Planning and creating a software architecture that implements and enforces security policies in software code.
D Defining a set of rules for naming and declaration rules for classes, methods, variables and functions.

20 Which of the following is a purpose of penetration testing?

A To identify whether a system has been properly configured.
B To test if a system meets non-functional requirements when used to full capacity.
C To test if the infrastructure is robust enough to meet system demands.
D To test whether a system is capable of being easily hacked.

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