

# BCS Level 3 Certificate in Programming QAN 603/1192/7

## 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.

**-End of Paper-**