**5220-530 MARCH 2019**
**Level 3 Advanced Technical Certificate in Digital Technologies/**
**Level 3 Advanced Technical Extended Diploma in Digital**
**Technologies (720)**
Level 3 Digital Technologies – Theory exam (1)

**Monday 4 March 2019**
**09:30 – 12:00**

**If provided, stick your candidate barcode label here.**

Candidate name (first, last)

First

Last

Candidate enrolment number

Date of birth (DDMMYYYY)

Gender (M/F)

Assessment date (DDMMYYYY)

Centre number

Candidate signature and declaration*

- If additional answer sheets are used, enter the additional number of pages in this box. ➡ 0 0
- Before taking the examination, **all candidates** must check that their barcode label is in the appropriate box. Incorrectly placed barcodes may cause delays in the marking process.
- Please ensure that you staple additional answer sheets to the **back** of this answer booklet, clearly labelling these with your full name, enrolment number, centre number and qualification number in BLOCK CAPITALS.
- All candidates need to use a **black/blue** pen. **Do not** use a pencil or gel pen, unless otherwise instructed.
- If provided with source documents, these documents **will not** be returned to City & Guilds, and will be shredded. Do not write on the source documents.

***I declare that I had no prior knowledge of the questions in this examination and that I will not divulge to any person any information about the questions.**

**You should have the following for this examination**
- a pen with blue or black ink

**General instructions**
- The marks for questions are shown in brackets.
- Answer **all** questions.
- Answer the questions in the spaces provided. Answers written in margins or on blank pages will **not** be marked.
- Cross through any work you do not want to be marked.

1    State **two** specialist roles within a project team.                                      (2 marks)

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2    Explain the process of the following **two** stages of viability and financial considerations in Project Management.
•       Estimating.
•       Cost control.                                                                           (4 marks)

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3    Explain **each** of the following.
•       Mandatory Access Control (MAC).
•       Discretionary Access Control (DAC).                                                     (4 marks)

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4   Explain one security risk associated with **each** of the following storage media types.
    • Removable.
    • Cloud.
    • Local hard disk.                                                              (6 marks)

5   State **four** threats to an IT system.                                          (4 marks)

6    Explain the use of **each** of the following cryptographic algorithms.
     •    Hashing.
     •    Symmetric.                                                                                    (4 marks)

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7    State **four** types of network hardware.                                                         (4 marks)

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8    Explain one purpose of **each** of the following network software applications.
     •    Proxy server.
     •    Firewall.                                                                                      (4 marks)

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9    Explain the role of the following layers of the TCP/IP model.
     •    Transport.
     •    Internet.
     •    Network Access.                                                                               (6 marks)

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10   Explain **each** of the following logical data transmission methodologies.
     •      Broadcast.
     •      Token passing.                                                              (4 marks)

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11   Explain **each** of the following software development lifecycle models.
     •      Waterfall.
     •      Prototyping.
     •      Spiral.                                                                     (6 marks)

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12   Explain the following fundamental principles of Object Oriented Programming.
- Classes.
- Encapsulation.          (4 marks)

13   State **four** software technologies used in website construction.      (4 marks)

14   State **two** elements that can be part of the requirements documentation
in software development.         (2 marks)

15    Explain the format of the following **two** numbering systems.
       •     Binary.
       •     Hexadecimal.                                                              (4 marks)

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16   You have been asked to produce a report for the Board of Trustees of a local charity regarding the development of an intranet website containing details of their volunteers and all the tasks needing allocation.

Discuss what would be included in your report.                                        (9 marks)

17 A group of animal rescue shelters have joined together to reduce their costs by purchasing their equipment, medical supplies and animal feed as a consortium. They need to create a shared pricing and ordering system, accessed over the internet by a PC located in each shelter.

Discuss what the consortium would need to consider for their system and how they should implement it.

(9 marks)

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**End of examination**