Modified Enlarged 18pt
OXFORD CAMBRIDGE AND RSA EXAMINATIONS

Monday 11 January 2021 – Morning

Level 3 Cambridge Technical in IT

05838/05839/05840/05841/05842/05877

Unit 1: Fundamentals of IT

Time allowed: 1 hour 30 minutes plus your additional time allowance

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You must have:
a calculator

Please write clearly in black ink.

Centre number					

Candidate number				

First name(s) _____

Last name _____

Date of birth	D	D	M	M	Y	Y	Y	Y

READ INSTRUCTIONS OVERLEAF

INSTRUCTIONS

Use black ink. You can use an HB pencil, but only for graphs and diagrams.

Write your answer to each question in the space provided. If you need extra space use the lined pages at the end of this booklet. The question numbers must be clearly shown.

Answer ALL the questions.

INFORMATION

The total mark for this paper is 80.

The marks for each question are shown in brackets [ ].

Quality of extended response will be assessed in questions marked with an asterisk (*).

ADVICE

Read each question carefully before you start your answer.

SECTION A

Answer ALL the questions.

Put a tick (✓) in the box next to the ONE correct answer for each question.

1 Which of the following is made up of spinning magnetic storage discs? [1]

(a) Flash Drive ☐

(b) Hard Drive ☐

(c) Solid State Drive ☐

(d) USB Stick ☐

2 Which of the following devices converts digital data to analogue data? [1]

(a) Hub ☐

(b) Modem ☐

(c) Router ☐

(d) Switch ☐

3 Which of the following units of multiple bytes is equal to 10^{15} bytes? [1]

(a) Mebibyte ☐

(b) Petabyte ☐

(c) Pebibyte ☐

(d) Terabyte ☐

4 A game magazine provides a link to download a new game which is initially provided as free, but has a built-in expiration date. This is an example of what kind of software? [1]

(a) Bespoke ☐

(b) Freeware ☐

(c) Off-the-shelf ☐

(d) Shareware ☐

5 Which of the productivity software below would be the MOST suitable for storing large amounts of online shopping transaction data? [1]

(a) Database ☐

(b) Email ☐

(c) Spreadsheet ☐

(d) Word Processor ☐

6 Which of the following allows a user to share images, text and video with a large number of recipients? [1]

(a) Social Media ☐

(b) Teleconference ☐

(c) Video Conference ☐

(d) VOIP ☐

7 Installable troubleshooting tools may not help a software developer to detect:

(a) file corruption ☐

(b) file deletion ☐

(c) hardware issues ☐

(d) user error ☐ [1]

8 Which of the below features in the Application layer of the TCP/IP protocol stack? [1]

(a) FTP ☐

(b) ICMP ☐

(c) TCP ☐

(d) UDP ☐

9 A permanent point-to-point link creating a pre-established WAN connection is called:

(a) ADSL ☐

(b) ISDN ☐

(c) Leased Line ☐

(d) PSTN ☐ [1]

10 In a remote area with no network coverage, which of the following connectivity methods would be MOST suitable to make a voice call? [1]

(a) Cellular ☐

(b) Data ☐

(c) PSTN ☐

(d) Satellite ☐

11 Which of the following is NOT a feature of body language? [1]

(a) Eye Contact ☐

(b) Hand Gestures ☐

(c) Posture ☐

(d) Tone of Voice ☐

12 Which communication technology is MOST appropriate when a short but urgent/immediate communication is required? [1]

(a) Blog ☐

(b) Email ☐

(c) Instant Messaging ☐

(d) Word Processing ☐

13 An online shop selling lycra cycle clothing directs you to the payment page, but you notice that the URL does not begin with HTTPS. You do not enter your bank details.
This is an example of:

(a) disability discrimination ☐

(b) gender discrimination ☐

(c) staying safe online ☐

(d) whistleblowing ☐ [1]

14 A user clicks on an application that they think is safe, but it actually opens a 'backdoor' to their computer. This is an example of:

(a) a trojan ☐

(b) a virus ☐

(c) interception ☐

(d) phishing ☐ [1]

15 Which of the following is the most effective way to prevent intercepted emails from being read? [1]

(a) Anti-spyware ☐

(b) Anti-virus ☐

(c) Encryption ☐

(d) Firewalls ☐

SECTION B

Answer ALL the questions.

JDI Academy Group have acquired a new school and are looking at the ICT requirements, including hardware and software to improve the school resources.

16 The Digital Media Department computers need hardware upgrades to run movie and sound editing software.

    (a) Identify ONE expansion card that could be bought. Explain why it is suitable for the Digital Media Department computers.

Expansion Card

_____

_____

Reason

_____

_____

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_____

[3]

(b) Each computer is connected to the main school network using an internal wireless adapter and a wireless access point. Students complain that their large media files are slow to download.

Identify and explain a more effective connectivity method to download the media files.

Connectivity method

_____

_____

Reason

_____

_____

_____

_____

[3]

17 **(a)** **The JDI Academy Group IT technicians are thinking about using a ticketing system to manage faults.**

Identify TWO advantages and ONE disadvantage of using a ticketing system to log reports of faults.

Advantage 1

_____

_____

Advantage 2

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_____

Disadvantage

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[3]

(b) **Convert the denary number 57 into binary and then into hexadecimal.**

Show your workings out. [2]

Answer: Binary_____

Answer: Hexadecimal_____

(c) **The JDI Academy Group IT technicians have installed an integrated design environment (IDE) for the students to use.**

Identify FOUR features of an IDE.

1_____

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2_____

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3_____

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4_____

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[4]

18 **(a)** **The JDI Academy Group IT technicians run weekly disk defragmentation on the classroom computers.**

Explain TWO advantages of using disk defragmentation.

1_____

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2_____

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[4]

(b) **Transmission Control Protocol (TCP) and User Datagram Protocol (UDP) are used to transfer data over the internet.**

Explain how TCP and UDP transfer the data differently.

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_____ **[3]**

19* **JDI Academy Group are going to move all school data, including student work, staff work and administration files into a cloud-based storage system.**

Explain the benefits and limitations of moving to a cloud-based storage system. [10]

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20 (a) JDI Academy Group will install a new wired network using a fibre optic bus and ethernet star network for each classroom.

Identify and describe THREE pieces of hardware that could be used to create this network.

1_____

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2_____

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3_____

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[6]

(b) The school network uses a Ring topology.
Describe ONE advantage and ONE disadvantage
of this network topology.

Advantage _____

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Disadvantage _____

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[4]

(c) The JDI Academy Group technicians would like teaching staff to stop leaving their passwords written down on notes stuck to their monitors. The technicians would like to explain to staff that doing this is a bad idea.

Identify ONE appropriate type of communication software and explain how the technicians could use it to explain the issue to teaching staff.

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_____ **[4]**

(d) **The JDI Academy Group would like all of its technicians to wear a uniform.**

Identify and describe TWO other ways that the technicians could demonstrate that they are ready for work.

1_____

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2_____

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[4]

(e) JDI Academy Group would like its technicians to have Industry Certification.

Identify TWO benefits to the JDI Academy Group of the technicians having Industry Certification.

1_____

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2_____

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[2]

21* JDI Academy Group would like its teaching staff to have remote access to their teaching resources and student data from home.

Discuss the benefits and risks of providing remote access to the teaching resources and student data. [10]

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22 **(a)** **JDI Academy Group IT Technicians have noticed key logging software installed on several machines in school.**

Identify the most appropriate type of software that can be used to remove the key logging software.

_____

_____ **[1]**

(b) **Identify and describe ONE method that can be used to dispose of the school's old hard drives.**

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_____ **[2]**

END OF QUESTION PAPER

ADDITIONAL ANSWER SPACE

If additional answer space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s) – for example, 16(a) or 17(b).

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Version 5