

KASNEB

CICT PART I SECTION 1

INTRODUCTION TO COMPUTING

MONDAY: 21 November 2016.

Time Allowed: 3 hours.

Answer ALL questions. Marks allocated to each question are shown at the end of the question.

QUESTION ONE

(a) Electric power can be erratic and hence computers need to be protected against power failure.

Required:

(i) Describe four components of power protection systems. (4 marks)

(ii) Outline five factors which should be considered when choosing power protection devices for a computer system. (5 marks)

(b) Distinguish between the following terms:

(i) "Random access memory (RAM)" and "hard disk". (2 marks)

(ii) "Systems software" and "application software". (2 marks)

(c) Explain five weaknesses associated with the use of batch processing system. (5 marks)

(d) Identify two advantages of a real time processing system. (2 marks)

(Total: 20 marks)

QUESTION TWO

(a) Vendors who are involved in the supply of computer hardware or software affect the risks that an organisation might face in an attempt to prevent cyber attacks, accidents and system failures.

Required:

Identify six possible risk factors that could be considered when evaluating these vendors. (6 marks)

(b) Outline five examples of management information systems (MIS). (5 marks)

(c) Describe the following file organisation methods:

(i) Serial. (2 marks)

(ii) Sequential. (2 marks)

(iii) Indexed sequential. (2 marks)

(d) Highlight three commercial applications of digital versatile disk (DVD). (3 marks)

(Total: 20 marks)

QUESTION THREE

(a) A system uses three switches P, Q and R. A combination of switches determines whether an alarm, Y, sounds.

If switch P or switch Q are in the ON position, and if switch R is in the OFF position, then a signal to sound an alarm, Y is produced.

Required:

(i) Convert this problem into a logic statement. (2 marks)

(ii) Construct a logical circuit (network) from the logic statement converted in (a) (i) above. (3 marks)

(iii) Construct the truth table of the above system. (3 marks)

- (b) Perform the following computations:
- (i) $4103 \text{ base}_8 - 356 \text{ base}_8$ (2 marks)
 - (ii) $DAD \text{ base}_{16} + FADE \text{ base}_{16}$ (2 marks)
 - (iii) $111 \text{ base}_2 \times 11 \text{ base}_2$ (2 marks)
- (c) Describe two types of computer keyboards. (2 marks)
- (d) Distinguish between “cold booting” and “warm booting” of a computer system. (4 marks)
- (Total: 20 marks)**

QUESTION FOUR

- (a) Application softwares are designed for specific purposes for specific applications.

Required:

Describe three different forms in which application software could be made available to users. (3 marks)

- (b) Illustrate five steps of resolving a program or utility that does not load or has an error when it attempts to load. (5 marks)
- (c) You have realised that your computer has some problem with the operating system you have installed and you wish to fix them.

Required:

Summarise the steps you would follow to boot up your computer from a bootable digital video disk (DVD). (4marks)

- (d) Peter Kore is considering setting up an extranet for his business.

Required:

- (i) Explain the term “extranet”. (2 marks)
 - (ii) Highlight six reasons why Peter Kore might consider when setting up an extranet for his business. (6 marks)
- (Total: 20 marks)**

QUESTION FIVE

- (a) (i) Define the term “mash-up”. (2 marks)
 - (ii) Demonstrate why mash-ups are becoming a popular feature on the internet. (2 marks)
- (b) In addition to the normal keyboard and mouse modes of input, there are other source data-entry devices.

Required:

- (i) Citing a suitable example, explain the term “source data-entry device”. (3 marks)
- (ii) Use an example to demonstrate why source data-entry devices are preferred to the keyboard and mouse mode of data entry. (2 marks)
- (iii) Suggest three additional source data-entry devices citing where they are applied. (6 marks)

- (c) Repetitive strain injury (RSI) is a common illness with computer users.

Required:

- (i) Explain the causes of “RSI”. (2 marks)
 - (ii) Identify three precautions that could be taken to prevent RSI. (3 marks)
- (Total: 20 marks)**
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