

Question 1 [30 marks]

- a) Perform the following binary addition: $00110_2 + 01101_2 =$ (2 marks)
- b) Errors influence the accuracy of information. What is a transposition error? (2 marks)
- c) State any three limitations of networking. (3 marks)
- d) Differentiate between SUM and SUMIF functions as used in Microsoft Excel. (4 marks)
- e) State any three types of text alignment options available in Microsoft Word. (3 marks)
- f) State the technologies that were used in the first and second generation of computers. (2 marks)
- g) What is a slide transition effect as used in Microsoft PowerPoint Software? (2 marks)
- h) State any three types of CPU registers. (3 marks)
- i) State three advantages of solid state storage devices. (3 marks)
- j) Distinguish between turbo boosting and hyper threading as CPU technologies. (4 marks)
- k) State two advantages of high level programming languages. (2 marks)

Question 2 [20 marks]

- a) Physical topology refers to the way in which computers and other devices have been arranged in a network. Describe any three types of physical topologies. (6 marks)
- b) A computer system has four main basic functional units. Briefly describe them. (8 marks)
- c) What is user friendliness with reference to software? (2 marks)
- d) There are three types of control structures used in programming. Explain any two. (4 marks)

Question 3 [20 marks]

- a) Describe any three types of computer processing files (6 marks)
- b) Discuss four functions of an operating system. (8 marks)
- c) There are many factors that affect the usability of a website. Explain any three web design best practices and design principles. (6 marks)

Question 4 [20 marks]

- a) Describe the three main types of computer networks. (6 marks)
- b) There are different types of views that can be used in Microsoft PowerPoint. Discuss any three. (6 marks)
- c) Differentiate between relative and absolute cell referencing as used in Microsoft Excel. (4 marks)
- d) Using ones' complementation, perform the following binary arithmetic leaving your answer in binary form. $5_{10} - 3_{10} =$ (4 marks)

Question 5 [20 marks].

- a) A translator refers to language processors that convert the source program into object code. Explain the three types of translators used in programming. (6 marks)
- b) State the three coding schemes used in data representation. (3 marks)
- c) Discuss any four internet services. (8 marks)
- d) Convert 45_{10} to its binary equivalent. (3 marks)