



JUNE 2016

MANAGING COMPUTER SYSTEMS

Instructions to candidates:

- a) Time allowed: Three hours (plus an extra ten minutes' reading time at the start – do not write anything during this time)
- b) Answer any FIVE questions
- c) All questions carry equal marks. Marks for each question are shown in []
- d) Mark allocation should determine the length of your answer and the time you spend on it. Generally, one mark is awarded for each valid point
- e) Read all sections of the question before attempting any part of it
- f) In questions requiring reference to particular institutions or applications, your answer must reflect this. Answers without these references will score few marks
- g) No computer equipment, books or notes may be used in this examination

1. The table below gives details of all activities in a particular project. The duration is measured in weeks.

Activity	Duration	Manpower needed	Previous activities
A	1	4	none
B	3	2	none
C	6	2	none
D	2	3	A
E	8	2	B and D
F	6	4	B and D
G	5	3	C
H	2	2	G and F
I	1	4	C

- a) Define the terms **activity** and **event**. [2]
 - b) Draw a network diagram for this project. Mark in the durations and manpower needed. [5]
 - c) Determine the minimum time in which this project can be completed. Show clearly how you obtained this result. Determine the critical path. [5]
 - d) Draw a bar chart showing the activities in EARLIEST START position. [4]
 - e) Draw a histogram showing the manpower needed **each week** during the project if each activity begins on its earliest start time. [4]
2. a) To be effective information needs to meet certain criteria. Outline and explain at least FOUR criteria that make information EFFECTIVE. [8]
 - b) Management decisions are usually made at three information levels.
 - i Name these THREE levels and state who they apply to. [6]
 - ii Consider a company that manufactures large domestic appliances such as washing machines and freezers. Describe and justify at least ONE decision that would be made at EACH of these three levels. [6]

3. Mr Wheeler has decided to open his own shop buying and selling second-hand bicycles, he will also offer repairs and maintenance. He will need a van and specialist tools to carry out his business. Mr Wheeler employs a lady part-time to carry out his administration and bookkeeping. He needs premises with a shop front and a workshop to carry out the repairs and maintenance.
- Outline the points he should be discussing in a business plan with his bank manager in order to secure finance to start his business. [6]
 - Explain how a computer system might help him to administer the business. Discuss what hardware he will require. [7]
 - Identify software that would be useful and discuss HOW and WHEN it would be used. [7]
4. A number of different tools are used in business to manage and process information. With specific reference to an **insurance company**, describe FOUR of those tools listed below:
- Relational database
 - Artificial intelligence
 - Expert systems
 - Internet
 - Data mining systems
 - Predictive modelling
- For EACH – provide a description of what it is, how it is used and how it would particularly benefit an **insurance company**. [5 each]
5. Many organisations use the INTERNET for business transactions. List and explain TEN advantages and TEN disadvantages for a company in using the Internet for business. [20]
6. Many people these days have had some computer experience by the time they go to work and they are often expected to be able to use IT systems without any additional training.
- What issues might arise if little or no IT training is provided to new employees? [10]
 - Discuss TWO types of training that would benefit new employees. Detail the advantages and disadvantages of EACH. [10]
7. Few businesses can compete in today's market without some form of computer system. Bob is a self-employed builder who works alone. He has always conducted his business by advertising in the local newspaper and with his phone number listed in the telephone directory. He gives his customers hand-written quotes and invoices and he plans his workload using a paper diary.
- Discuss the following in detail:
- The advantages to Bob of buying a computer to help him manage his business
 - The problems he might face
 - Other issues that are likely to arise [20]
8. A company offers short-term loans for people needing to borrow money quickly. Typically these loans are for unseen emergencies such as a new car, domestic appliances or household repairs etc. The company uses a computer system to keep records of clients and loan details. When a client wishes to borrow money their personal details are entered into the computer system. The loan company needs to check the customer's credit status in order to decide whether they are eligible for a loan. After a loan has been approved and issued, details are kept on the computer system of payments made. Repayments may be made by direct debit or by credit card instalments.
- Discuss in detail the potential computer crimes that could affect people who take out a loan. [6]
 - Describe ways that the loan company can protect its users and also ways that the borrowers can safeguard themselves against these crimes. [8]
 - Discuss a **law** that the loan company has to comply with to ensure that the borrower's personal information is safe. [2]
 - Discuss and explain TWO of the **rights** of the borrowers under this law. [4]