

The following suggested answers are provided as a guideline for the test paper. It is suggested that teachers allocate 5, 4, 3, 2, 1 or 0 marks to each question. The completed paper would then be marked out of a total of 50. Points could then be allocated for grading from A+ to E to indicate the level of the student.

The answers given are suggested answers only. It is not suggested that students would make all of the points given nor that the points made within the answer are inclusive of all points which could be made.

Question 1

Candidates would be expected to identify that the following information processing phases would alter for each of the those below for which candidates may be given credit, providing they fully justify their answers.

- it is time-consuming to write invoices

The main phases which would alter here are input and output. While other phases are affected, since the dot-point specifically refers to writing invoices it is suggested that input and output are the most appropriate phases.

Phase	Change
Input	Book prices and titles would no longer have to be manually entered for the invoice but would be automatically generated after the book number was entered using the barcode pen.
Output	Previously the invoices were hand-written (possibly on pre-printed forms). Under the computerised system the invoices would now be printed, a process which would be quicker than the old manual system.

- mistakes have sometimes been made in the invoice total due to mistakes in book pricing

Phase	Change
Validation	Under the manual system the assistant writes in the price of a book from the book cover. Under the new system, the price of the book would be held in the central computer for retrieval by each of the bookshops. Mistakes would be less frequent under the computerised system providing an effective method of data validation was used when entering book details. Inconsistencies in pricing the same book would be impossible under the computerised system
Retrieval	Book prices and titles would no longer have to be manually retrieved from the book cover with possible error, but would be automatically retrieved after the book number was entered using the barcode pen.

- some books have been sitting in stock for years.

The phase which is altered here is storage of information about books. Under the existing manual system there may have been no way of determining how long a particular book had been in stock, Under the computerised system the purchase date of stock would be recorded. The phase in which the retrieval of information about stock occurs would be changed. Under the new computerised system, reports of the amount of time which books had been stock would be improved.

Question 2

Some idea of the mission of Smiths Books can be gained from the case study; for example having the latest books in stock as well as having an outstanding selection of books for customers to choose from.

The adoption of the *Book Control* information system would help Smiths Books to achieve its goals in the following ways. Students may, of course, add to the list but should justify their answers.

Providing a high level of customer service

While *Book Control* may not have much effect on Smiths Books book ordering system, there are several ways in which it would help the organisation. For example, the staff would have a much better idea of which books were in stock. If a potential customer wished to purchase a recent book, by referring to the *Book Control* database, staff would be able to tell that customer whether that book was in stock. They could also refer to stock held at their other stores and order a book to be brought to their store if that book was out of stock.

Having an outstanding selection of books for customers to choose from

Similar to the above, staff would have a much better idea of which books were in stock by appearing more knowledgeable to customers about the business.

Increase profits

Some of the ways in which *Book Control* may do this is by:

- improved stock control
- improved knowledge of financial situation of business eg liquidity, sales, assets and liabilities
- identification of slow moving and fast moving titles so that slow moving titles may be disposed of as sale items and fast moving titles can be re-ordered in a timely way.

Increased market share

Book Control would improve the effectiveness and efficiency of the organisation as a whole, which in turn should enhance Smiths Books' reputation as a bookseller. Increased effectiveness and efficiency would also help increase Smiths Books market share as customers came to appreciate the improved service due to *Book Control*.

Question 2 (continued)

Increased efficiency, effectiveness and productivity

In claims for increased efficiency, effectiveness and productivity within the organisation, students should make it clear that they understand clearly what is meant by these terms.

Increased efficiency under the computerised system would occur through the organisation being able to answer customer's queries more quickly, being able to prepare invoices faster, and salespersons finding the prices of books more quickly.

Increased effectiveness using *Book Control* means that the salespeople would be able to give more accurate and better answers to customer queries, the prepared invoices would be more comprehensive and, importantly, more accurate than under the manual system.

Productivity would be increased under *Book Control* through salespersons being able to serve an increased number of customers than under the old manual system. Time would not be wasted manually writing invoices or searching the shelves to see if a book was in stock.

Capital growth

Increased effectiveness and efficiency within Smiths Books due to *Book Control* should also mean that the organisation would be in a good position to expand by opening additional branches.

Question 3

In the implementation of *Book Control*, Smiths Books would need to develop procedures in the area of control and security. These would fall into two categories: the control and security of the *Book Control* application itself, and the control and security of user access.

Procedures would be needed for backing up the system to counter possible errors or failures in *Book Control*. These procedures should allow for the systematic backing up of all files using streaming tape, floppy disks or removable hard drives each day as well as the archiving of previous file backups. The rotating use of file backups (possibly grandfather-father-son) would seem to be a good idea. Off-site storage of archived backups would help protect the organisation against such things as fire. Procedures are also needed for the recovery of the system after a breakdown.

Procedures would need to be devised within the filing system for various levels of user access to the system. Managers would need different file access privileges to those of part-time staff for example. A user identification and password system of user access should be established together with logon procedures. The security of files within the system depends to a large extent on the security of the password system used.

Other possible points which students may make include:

- audit control procedures, so that transactions within the system can be monitored, are desirable;
- procedures are necessary for the virus protection of computer files;
- backup data which is held onsite should be held in fireproof security cabinets;
- contingency procedures for the replacement of computer equipment should be in place;
- all control and security procedures should be recorded and documented.

Question 4

The economic and social implications with implementation of *Book Control* by Smiths Books would largely seem to be positive ones. Some of the implications for each group mentioned in the question are as follows.

Existing staff

- Existing staff would need to be retrained in the use of the new system, hence they would need to acquire new skills. This may be a problem for some staff who dislike working with machines. This problem may be alleviated by providing time for effective staff training in the use of *Book Control*. Management should emphasise that the new system is to be implemented to solve problems rather than creating new ones.
- It would not appear that the positions of any staff would be redundant. In fact, increased efficiency, effectiveness and productivity due to the computerised system may mean that additional staff need to be employed.

Customers

- The greatest implication for customers under the computerised system is improved satisfaction with the standard of service provided by Smiths Books due to more effective and efficient service by the organisation.

Management

Management could reasonably expect the following social or economic implications:

- improved staff morale
- greater profitability within the organisation through such things as improved stock control and greater staff efficiency
- the ability to manage the organisation more effectively

Question 5

Some of the factors Mr Smith should consider in purchasing a printer are:

- the reliability of each printer
- the availability of service and spare-parts
- the quality of the print
- the quality of printed graphics
- the speed of each printer (pages per minute)
- the resolution of each printer (dots per inch)
- whether the laser printer is networkable
- does the laser printer contain postscript fonts

The inkjet printer seems very cheap and the work that it would produce would probably look that way too. The laser printer would produce high quality output and would allow for the printing of graphics and photographs. In the event that the use of computers by Smiths Books expands into Desktop Publishing, the use of a laser printer would assist in the production of copy for magazines, flyers and brochures. Smiths Books is concerned about image, the use of a laser printer rather than a cheap inkjet printer would enhance that image.

(Note: Students may of course validly argue that despite the above there is a good case for buying an inkjet printer.)

Question 6

The sorts of information which might be needed include:

- Will *Book Control* meet both current and future needs? Are there any other better applications available?
- Does Mylar Software offer software support for *Book Control*?
- Mylar Software has only been in existence for a short time. Will it still be in existence in a few year's time so that it will be able to support *Book Control* in the foreseeable future?
- Mylar Software is located in Queensland. Will they be able to support the software from there? Perhaps online software maintenance could be negotiated via modem.
- What costs are associated with the purchase of *Book Control* and associated hardware including purchase price, installation and maintenance?
- Is the *Book Control* application stable or does it have a reputation for 'crashing'? Does it have a good reputation for reliability?

Question 7

Among the areas which could be tested include:

- time taken to backup and print files
- does the barcode module works accurately
- does the software contain fast and easy-to-use internal data validation
- is *Book Control* user friendly and easy-to-use
- the time taken to access data
- what happens when more than one user updates a particular record at the same time
- the time taken to recover after a software or hardware crash
- do the existing files recover properly after a crash or is it necessary to revert to a previous file generation?
- what happens to response times when all terminals are being used simultaneously
- can the software access the printer and barcode reader?

Question 8

- Training will be needed for both managers and shop staff. A training program needs to be drawn up for these users
- One staff member needs to be employed or a staff member needs to be re-trained as the main operator of the central computer in Hawthorn. This operator would be responsible for issuing user identification and passwords and for the overall maintenance of the central computer.
- The manager or other suitable staff member should be trained how to operate each store's computer.
- Some key personnel may need to be trained off-site before the new system is implemented
- Other employees will need training, possibly on-site, since the new system will possibly be implemented at their site. This training could be done during time set aside for this task, otherwise there is the possibility of constant interruption. Alternatively, the training could be done on-the-job with the assistance of a trainer.
- It may be possible to provide additional training for staff online, once they have got past the initial steps.

Question 9

The following documentation would be needed:

- staff manual

This manual should contain detailed instructions on how staff would operate the *Book Control* system including

- starting and stopping the computer
- what do in case of a specific problem
- security procedures

- operator's manual

This manual should contain detailed instructions for the installation and maintenance of the software at the central computer.

It would provide instructions for:

- creation of User Names and Passwords
- file backup

- Software reference manual at each site containing a complete reference to the features of *Book Control*.

Factors affecting design of documentation include:

- training manuals should be clearly written in plain English
- the manuals should be prepared by someone with expertise in the area - perhaps there is someone in Smiths Books may have the sufficient experience although this seems unlikely. If this is not the case then an outside expert or experts should be brought in for this task.
- the manuals should be logically organised, easy to understand and contain an index.
- documentation should be trialed to check that it is workable - that the steps described within the documentation are clearly expressed and work.

Question 10

Evaluation is achieved by measuring how the system performs against goals which have been set by Fast Print before the system has been implemented. Where possible these goals should be expressed in a quantifiable form. For example, "We aim to tell you within one minute whether or not a particular book is in stock".

The performance of the system can then be measured against these goals to check how well the system is working and to evaluate the system's performance. It also allows the system to be checked to see if its performance improves over time by providing a set of figures which allows the monitoring of the system performance. That is, both periodic and random checks of system performance should be carried out from time to time to measure system performance against both the previously established aims of the system and the previous system performance.

Methods of evaluating system performance include:

- Surveying staff involved and customers at intervals to check how they perceive that the system is working. This helps alleviate both staff and customer dissatisfaction if they perceive there to be problems with system.
- recording staff and customer complaints
- Observation of the system to check that it is working

END OF SUGGESTED SOLUTIONS
1995 IPM TRIAL CAT 3

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