Candidates should answer ALL the questions in Part A and THREE of the five questions in Part B. Part A carries 40% of the marks available and Part B carries 60%. Candidates should allocate their time accordingly.

No reference material of any kind may be taken into the examination.
PART A. Answer ALL questions in this section.

**Question A1**
Describe THREE barriers to a new business entering an established market according to Michael Porter.  

(Total 5 marks)

**Question A1 Mark scheme**
These could include:
- Costs to the customer of switching supplier (2 marks)
- Economies of scale achieved by existing large businesses (2 marks)
Other factors attract 1 mark:
- Need for capital for start-up costs
- Brand loyalty
- Existing businesses with exclusive agreement with important suppliers
- Existing businesses controlling distribution channels

Up to a maximum of 5 marks

(Total 5 marks)

**Question A2**
Explain the value to a business of effective Supply Chain Management.  

(Total 5 marks)

**Question A2 Mark scheme**
- SCM manages the relationship with a business’s suppliers
- Need to have sufficient stock available to deal with customer demand
- Need to prevent the costs of unnecessarily high stock levels
- Desirability of just-in-time ordering
- Selecting single (or small number of) reliable supplier(s) for long-term high volume supply contract reduces costs

Other valid points will score marks. 1 or 2 marks for each valid point up to 5 marks.

(Total 5 marks)

**Question A3**
a) Identify the key elements of the Information Systems Strategy Triangle.  

(3 marks)
b) Explain which key element drives the others.  

(2 marks)

(Total 5 marks)
Question A3 Mark scheme
a) Business, organizational and information strategies (3 marks)
b) The business strategy enshrines the business objectives. The organization and information strategies support these. (2 marks)
(Total 5 marks)

Question A4
List the key processes that make up knowledge management. (Total 5 marks)

Question A4 Mark scheme
- Knowledge generation
- Knowledge capture
- Knowledge codification
- Knowledge transfer

One mark for each process, plus one bonus mark for all four. (Total 5 marks)

Question A5
Identify FIVE distinct job roles that could exist in the IS/IT department of a business. (Total 5 marks)

Question A5 Mark scheme
Valid jobs include:
- Systems developer
- Systems analyst
- Database administrator
- Network administrator
- Web master
- Security officer

(Total 5 marks)
Question A6

The Human Resources and Finance departments of an organization both use the payroll system. Employees can access the system to look at their pay details and to change their home address. In this context, explain the importance of the qualities of:

a) accessibility
b) privacy
c) security

(Total 5 marks)

Question A6 Mark scheme

a) accessibility: the ability of potential users (such as employees in this case) to access relevant details
b) privacy: non-disclosure of an employee’s personal details to an unauthorised 3rd party
c) security: includes prevention of unauthorised people accessing data or processes, particularly in order to perpetrate crimes such as theft and fraud.

2 marks for each correct explanation up to a maximum of 5 marks.

Question A7

The success of an IT project is often judged on its closeness to the originally agreed scope, cost and duration.

a) What is the difference between project and business success? (2 marks)

b) Give THREE common business success criteria. (3 marks)

(Total 5 marks)

Question A7 Mark scheme

a) Project success is based on meeting the agreed scope/quality, time and cost targets. Business success is related to the performance of the implemented system and the degree to which it contributes to the objectives of the business as a whole.

(2 marks)
b) For example:

- Reduction in costs
- Increase in volume of sales
- Increase in value for products and services that customer is willing to pay

(3 marks)

Question A8

Explain the difference between a networked community and a community of practice.

(Total 5 marks)

Question A8 Mark scheme

A networked community is a collection of people with shared interests who can communicate with each other on a peer-to-peer basis. Internet technologies can support this. 1 mark for each valid point up to 2 marks.

A community of practice is a group of practitioners who have a particular area of knowledge and expertise, for example lawyers. There is usually some kind of process which controls recruitment to the group. There is often a ‘body of knowledge’ that is accepted as good practice. A community of practice could also be a networked community. 1 mark for each valid point up to 3 marks.
PART B. Answer any THREE of the following FIVE questions.

Question B9

A group of doctors work together at a medical centre in a town. Patients visit them at the centre for medical examination. Sometimes a doctor may pass a patient to another doctor who is more experienced with a particular type of medical problem. Doctors also refer patients to the local hospital.

a) Describe the difference between data, information and knowledge, giving an example of each one from the medical centre scenario above.

(8 marks)

b) Give FOUR reasons why the knowledge that the doctors use in their work might need to be managed.

(12 marks)

(Total 20 marks)

Question B9 Mark scheme

a) Data are the raw numbers or letters that have been recorded. Meta-data is needed in order to understand their significance. (1 mark)
   An example would be a patient’s name and address (1 mark).

Information is data that have been processed in some way to give them some meaning. (1 mark)
   For example, a time and date is added to the patient’s name and address and is associated with the identity of a doctor to produce an appointment. Information can be processed to produce further information e.g. management information reports about doctor workloads. (2 marks)

Knowledge is information that has been internalized within a human mind. It has been processed in some way so that it can be recalled and used as a basis for action. (1 mark)
   An example, the knowledge needed by a doctor to diagnose a patient’s complaint and prescribe appropriate treatment (2 marks)

(8 marks)

b) Reasons for a need for KM at the Medical Centre

- **Shared practice.** Although doctors will be expected to have a shared common store of knowledge because of similar training, some will have
more experience in dealing with particular areas. Being able to share these experiences will improve the expertise of the centre as a whole. (This could include knowledge about a particular patient)

- ‘Globalisation’ KM could facilitate knowledge sharing with the outside world, e.g. about new diagnostic tests and improved remedial actions, and also early warnings about epidemics.
- Rapid change. This has overlaps with the above. The state of medical science is progressing rapidly and doctors need to keep abreast of developments.
- Continuity/change of staff. If a patient’s doctor is not available, someone else should be able to continue with the patient’s care.
- Reducing information overload. Doctors could, in fact, be overloaded with information. Mechanisms that filter information and highlight key items would be helpful
- Embedding knowledge. Usually refers to embedding knowledge into products. Knowledge of doctors could be embedded into other ‘products’ e.g. in general preventative health advice to the local community.

Up to 3 marks for each of 4 reasons for KM i.e. 12 marks.

(12 marks)

Question B10

XYZ is a specialist engineering company whose payroll is administered by an outside accounting services company for an annual fee. XYZ is considering setting up its own payroll office and installing an IT-based payroll system.

a) Identify the types of cost that XYZ needs to consider that relate to
   - Implementing the new payroll capability
   - Operating the payroll system once installed.

(10 marks)

b) Identify the main sections/topics that would need to be covered in a business case report supporting the proposal for an in-house payroll.

(10 marks)

(Total 20 marks)

Question B10 Mark scheme

a) Implementation costs would include:
License costs for the software packages selected
Cost of equipment needed to run the software
Cost of data take-on e.g. setting up details of employees for payroll
Costs of special stationery (e.g. for pay slips)
Cost of accommodation for equipment
Set-up technical support and staff training
Operational costs would include
Additional staff cost to administer the system e.g. for data entry
Cost of electricity
Maintenance costs
Back-up and security
1 mark for each valid section/topic up to 10 marks

b) Among the sections in a business case report would be:
Overview/background
Assumptions the proposal is based upon
Outline of proposed programme of work and/or business change
Envisaged benefits (monetarised, quantified and non-quantified)
Costs –relating to both implementation and operation
Cost/benefit analysis. ROI, Payback period, NPV could be calculated
Timescales
Risks
Recommendations
1 or 2 marks for each valid section/topic up to 10 marks

Question B11

a) Organizations are often described as pyramids with three levels: operational, tactical (or management), and strategic. Describe the functions that are carried out at each level.

(6 marks)

b) Identify the nature of the information that is needed and produced at each level, giving examples.

(9 marks)

c) Explain the types of IS/IT applications that could support the work at each level.
Question B11 Mark scheme

a) Levels and functions

- **Operational** Functions that carry out physical transactions e.g. taking orders, assembling products, delivering goods to customers.
- **Management/tactical.** Monitoring performance at operational level; identifying and removing obstacles to successful progress; allocating resources and coordinating separate workgroups.
- **Strategic.** Longer term planning e.g. which markets to enter or to leave, deciding on new product development, planning large-scale capital expenditure or reduction of capacity

Up to 2 marks for each level

b) Information needs at different levels

- **Operational** Factual data about job requirements, location of resources to do job, location of customers for deliveries etc. Generally, short-term, internal, detailed, accurate.
- **Management.** Tends to focus on summaries and aggregation of the data generated at operational level in order to monitor performance. It might be the basis for performance improvement actions.
- **Strategic.** Longer term, highly aggregated internal information, but also reliance on external information e.g. economic indicators, market and industry sector surveys

Up to 2 marks for each level, plus 1 for example

c) IT tools and applications

- **Operational** Transactional database-oriented applications – e.g. purchase order processing, inventory control, production planning, sales order processing etc
- **Management.** Data analysis tools e.g. data marts, which can generate Management Information reports etc.
- **Strategic.** As well as using tools such as data mining to test out ideas, applications that carry out simulations of scenarios could be used. Tools
that improve Information presentation may be important as proposals need to be persuasive.

Up to 2 marks for each level, up to 5 marks maximum

(5 marks)

Question B12
A public sector college which serves a wide rural area has a library of books and journals. It is considering a proposal to hold all the library content in a digital format which can be accessed by students and staff online. The old library would be closed.

a) Explain the purpose and nature of PESTLE analysis.

(8 marks)

b) Conduct a PESTLE analysis for the proposal for an electronic library described above.

(12 marks)

(Total 20 marks)

Question B12 mark scheme

a) Purpose and nature of PESTLE

The purpose of PESTLE analysis is to act as prompt list for the external, environmental factors and forces that will influence the probable success of a particular business. This analysis will can assist in assessing the feasibility of a proposed and help in shaping the proposal, particularly in identifying the risks. (2 marks)

PESTLE stands for the six types of factor that need to be assessed: Political (e.g government policies), Economic (external financial and business issues), Social (including demographics), Technology, Legal issues and Ecological/Ethical issues. (6 marks)

(8 marks)

b) PESTLE

- **Political.** As the college is in the public sector it will have to take account of relevant government policies. It may be that there is a government policy encouraging the digitisation of libraries. Digitisation might be done more efficiently if a consortium of colleges collaborated – this would need political organisation.

- **Economic.** Has the college got the resources to implement the proposal? Would there be financial savings that could pay for implementation costs?

- **Social.** What proportion of the students have access to the web? Would they have the capability to use the electronic library effectively? Could the
online service be used to support other social needs beyond student education?

- **Technological** including what equipment would students need to access the electronic library? Availability/not of sufficient bandwidth. Power supply issues. Would the system be accessible via mobile devices?
- **Legal** aspects e.g. There would be copyright issues relating to the use of digitised books and journals.
- **Environmental** Digitisation in the long-term would reduce the consumption of paper. A reliable electricity supply would be needed.

Other valid issues beyond those mentioned above would get credit. 0-2 marks for the treatment of each factor up to a maximum of 12 marks.  

(12 marks)

**Question B13**

The Eagle Eye Hotel is a luxury establishment near a national park with stunning wild animals which attracts many tourists. The hotel employs staff who can act as guides.

The hotel is expensive and most clientele are overseas tourists. The hotel has little IT beyond the use of word processing and a spreadsheet used to record bookings. This can cause problems for potential customers who typically have to make bookings via telephone.

A decision is being made about whether to adopt a web-based marketing strategy supported by an online holiday booking system.

a) Explain what a SWOT analysis is and what its usefulness would be when considering the proposal above.  

(6 marks)

b) Identify the factors that would need to be considered in a SWOT analysis of the Eagle Eye Hotel and its proposed Web strategy.  

(14 marks)

(Total 20 marks)
**Question B13 Mark scheme**

a) SWOT stands for Strengths, Weaknesses, Opportunities and Threats. SWOT analysis could relate to an existing situation, and how things might develop in the future. Alternatively the starting point could be a proposal for a business change. The analyst identifies relevant current factors in terms of Strengths and Weaknesses and relevant future factors as Opportunities and Threats. Ideally SW should have links to OT. Typically SW are internal to the organisation and OT are external.

(6 marks)

b)

<table>
<thead>
<tr>
<th>Current</th>
<th>Strengths</th>
<th>Weaknesses</th>
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<tbody>
<tr>
<td></td>
<td>Proximity to local attraction</td>
<td>Relative isolation</td>
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<tr>
<td></td>
<td>Experienced staff (including guides)</td>
<td>Narrow clientele</td>
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<tr>
<td></td>
<td>Affluent customers</td>
<td>Difficulty in booking</td>
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<td></td>
<td>Established business</td>
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<table>
<thead>
<tr>
<th>Future</th>
<th>Opportunities</th>
<th>Threats</th>
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<tbody>
<tr>
<td></td>
<td>Web presence would broaden market</td>
<td>Dependent on continuing existence of attractive national park</td>
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<td></td>
<td>24 hour access reduces problems with differing time zones</td>
<td>Unreliable internet access (and power supply)</td>
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<td></td>
<td>Target emerging markets e.g. China</td>
<td>Competitors could compete on price rather that quality</td>
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<td></td>
<td>Reliable booking system improves customer relations</td>
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1 mark for each valid entry up to a maximum of 14 marks

(14 marks)

END OF EXAMINATION