The Institute of Chartered Accountants of Pakistan

Information Technology

Instructions to Candidates:
(i)   ***All the Questions from Section-A are compulsory.***
(ii)   ***Attempt any TWO out of THREE Questions from Section-B.***

Section A

Q.1   Classify the following controls into Input, Processing and Output Controls.

      (i)   Limit checks on calculated amounts.
      (ii)   Signature on source documents.
      (iii)   Use of bar codes.
      (iv)   Marking a file as read only.
      (v)   Audit trail.
      (vi)   Run-to-run totals.
      (vii)   Exception report showing data that does not conform to specified criteria.
      (viii) Initial data should be within a predetermined range of values.
      (ix)   Checkpoint and recovery procedures.
      (x)   Unique login and password.
      (xi)   Restriction on printing of confidential reports.
      (xii)   Sequential checks.   ***(06 marks)***

Q.2   (a)   Briefly describe "Transaction files" and "Master files" with the help of **two** examples in each case.   ***(06 marks)***

      (b)   The sales day book of Paw Limited contains the following fields:
          • Date   • Customer ID   • Address   • Invoice Number
          • Customer Name   • Email Address   • Phone Number   • Amount

      Required:
      (i)   Which of the above fields could be set as primary key? Give brief justification to support your opinion.   ***(02 marks)***
      (ii)   Identify the fields that must be used by a program for generating customer-wise daily sales report.   ***(02 marks)***

Q.3   During the last two decades IT industry has seen enormous growth. Various technologies are now available for capturing of data.

      Required:
      Briefly explain each of the following:
      (a)   Bar Code Readers   (c)   MICR technology
      (b)   OCR software   (d)   OMR process   ***(10 marks)***

Q.4 Through the use of Artificial Intelligence (AI), Expert Systems can imitate human thinking and behaviour for the purpose of reasoning and reaching conclusions.

Required:
(a) Briefly describe key components of an Expert System. *(05 marks)*
(b) List **four** key benefits of AI over human intelligence. *(04 marks)*
(c) Describe by way of an example as to how an expert system could be used in each of the following areas:
- Healthcare
- Prediction
- Human resource management
- Production
- Accounting *(05 marks)*

Section B

Q.5 (a) List **ten** tasks that are typically performed by an operating system. *(05 marks)*
(b) Briefly describe the following types of anti-virus software:
(i) Scanners
(ii) Integrity Checkers *(05 marks)*

Q.6 You have recently joined as System Development Manager of Search Industries Limited which is a new company and is actively involved in automation of all of its major activities. You observed that your team consists of young and energetic programmers but most of them have learnt their programming skills on their jobs with little formal training. As a result, they are weak in documentation and waste a lot of time in making amendments before a program is finalised. They also lack the ability to use programming tools effectively.

Required:
(a) State five good programming practices which you would like your team to follow. *(05 marks)*
(b) Identify any **five** types of Computer Aided Software Engineering (CASE) tools and specify how each of the identified tool helps in system development process. *(05 marks)*

Q.7 The ATM machines of Creative Bank Limited (CBL) contain biometric security features besides conventional PIN control. The customers of CBL have a choice either to use Card + PIN or Card + Biometric option. Customers of other banks can also withdraw cash from CBL's ATM; however, they can only use Card + PIN option. A customer's card is captured by the machine after three consecutive unsuccessful attempts.

Required:
Prepare a program flowchart showing the process of cash withdrawal from CBL's ATM.
Assume that transactions other than cash withdrawals are not allowed. *(10 marks)*

(THE END)