


National University of Computer and Emerging Sciences, Lahore Campus

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Student : Name: _____ Roll No. _____ Section: _____

Instruction/Notes: Attempt all questions in the space given below. Write to the point.

Question 1: Beynon-Davies is quoted in the September 1999 issue of *The Computer Bulletin* as saying that 'information systems is currently at best a semi-profession'.

Discuss this statement by comparing the information systems development profession with other professions such as medicine and law. [2+2+1 Points]

To answer this question, you need to say what the characteristics of a profession are and then discuss how far information systems development shows these characteristics.

The introduction to this chapter lists four characteristics:

- substantial education and training are required in order to practise the profession;
- the members of the profession themselves decide the nature of this training and, more generally, control entry to the profession;
- the profession is organized into one or more professional bodies;
- the profession lays down standards of conduct with which its members must comply, and where necessary, enforces these through disciplinary procedures.

All of these characteristics apply to law and medicine. In both cases, to be registered as a member of the profession, you must pass a lengthy sequence of exams, either set by the professional bodies or set by institutions accredited by them. The professional bodies (the Law Society, the Bar Council, the General Medical Council, and the Royal Colleges) also lay down the level of practical experience required for registration and set and enforce codes of conduct.

None of these characteristics apply to information systems development in general. There are very large numbers of people who develop information systems who have no formal education or training in the field; they do not belong to any professional body and are subject to no code of conduct. It cannot therefore be said that information systems development is a profession.

However, those information systems developers who belong to professional bodies such as the BCS or the IEE (Institution of Electrical Engineers) can be regarded as constituting a profession, in that membership of those

bodies does demonstrate the characteristics identified above, although the 'experience only' route would be regarded by many as jeopardizing the claim to professional status.

Question 2: You have Rs. 9,000 to deposit. ABC Bank offers 12 percent per year compounded monthly, while King Bank offers 12 percent but will only compound annually. In which bank will your investment be worth more in 2 years? [2+2+1]

$$\text{ABC Bank} = 9000 * ((1 + 0.12/12)^{24}) = 9000 * (1.01)^{24} = 9000 * 1.27 = 11,430$$

$$\text{King Bank} = 9000 * ((1 + 0.12)^2) = 9000 * (1.12)^2 = 9000 * 1.2544 = 11,289$$

Question 3: Compare the following according to given factors: [3x3 Points]

	Liability	Change of ownership	Legal obligations
Limited Company	In the event that the company incurs debts or other legal liabilities, the owners of the company have no obligation to pay these. The most that shareholders stand to lose is the money they paid for their shares.	The ownership of the company is divided into a (usually large) number of shares. These shares can be bought and sold individually. The people who own these shares are known as the members of the company or shareholders.	Have to submit annual report.

Partnership	Both are jointly responsible for liabilities.	Change of ownership is difficult, depends on the partners to decide a method.	No obligations.
Sole trader	Individual's personal assets are at stake.	Selling the business.	No obligations.

Question 4: Your software company is dealing with a service provider that has two options for payment: you can either buy 3 year license of their software for 1 million PKR or you can buy yearly subscription for 500,000 PKR (and then renew twice).

What is the NPV of the second proposal assuming an interest rate of 10%? Which proposal will give you more value for your money? [2+1+1]

License: 1000000

Yearly Subscription: $500,000 + (1 / (1+0.10)^1) * 500,000 + (1 / (1+0.10)^2) * 500,000$

Proposal 2 = $500,000 + 500,000 * (1 / (1+.1)^1) + 500,000 * (1 / (1+.1)^2) \Rightarrow 4 \text{ POINTS}$
= $500,000 + 500,000 * 0.9091 + 500,000 * 0.8264$
= $500,000 + 454550 / 454500 / 454545.454545 + 413200 / 413223.140496 \Rightarrow 3 \text{ POINTS}$
= $1367750 / 1367700 / 1367768.59504 \Rightarrow 2 \text{ POINTS}$

1 POINT FOR CHOSING THE RIGHT PROPOSAL – Proposal 1

Question 5: Draw an organizational chart/structure for the following. [3+3+1]

Consider the case of a medium-sized UK-based company providing bespoke software development and consultancy in the UK and operating in several other western European countries through subsidiary companies there.

At the top level, the company decides to adopt a functional structure with a sales and marketing department and an operations department. In either case, it seems sensible to have a separate organization-level finance and administration department, probably under the management of the Finance Director.

The functional structure has the advantage of bringing together all the programmers, analysts, designers, and project managers in one group and all the sales and marketing staff in another. This offers great flexibility and should enable the head of each group to deploy its staff efficiently. Now probably this is necessary to structure the sales and marketing division according to the market sector (e.g. banking and finance, retail, etc.) because sales and marketing activity is usually only effective if aimed at specific sectors.

In order to sell in a country, it is almost essential to speak the language and to be familiar with the culture. Furthermore, despite the gradual harmonization of business regulations in the European Union, each country has its own laws, its own bureaucratic procedures, and its own way of producing accounts. All these factors suggest a need for a country-based organization. The best way of doing this may be to set up a subsidiary company in each country, with a small office, responsible for sales and marketing in that country. The subsidiary will be able to call on the sales and marketing division in the UK for specialist help.

The organizational structure within the operations division presents other difficulties. Although a project structure will obviously be used for carrying out individual contracts for customers, some higher-level structure is required. Do we group projects by market sector or by technical characteristics? It may be that both are appropriate, that is, projects, where the risks and problems are technical, are grouped into one or more units, depending on the technology required (e.g. digital signal processing, computer-aided design, etc.), while projects, where application considerations are more important, are grouped into units depending on market sector (e.g. banking and finance, retail, etc.).

Space for organizational chart/structure