National University of Computer and Emerging Sciences, Lahore Campus

Course Name:	**Professional Practices in IT**	**Course Code:**	**CS 4001**
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Exam Type:	**Midterm II**		

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

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

Question1: Recall the case study of Syniad Software Ltd discussed in detail during the class. As per their future expansion plan, the directors wish to see the company ultimately attain a market share of 15 per cent in the UK and 10 per cent across the rest of Europe. As a step towards this, they are formulating a plan to raise the UK market share to 10 per cent and to attain a market share of 5 per cent in Holland, Germany, Denmark and Italy, within the next five years. It is estimated that this means increasing the staff from the present 200 to around 1200. You are required to figure out the potential financial and management issues they have to deal with and possible solutions in order to realize this expansion plan. Make a bullet point for each issue identified and also explain very briefly each point. [8]

Financial Issue(s)

Raise capital generally with selling of equity (by becoming public company), loans and grants are not practical.

Raise more profit by increasing charging rates and possible product/package development (selling licenses can generate more money)

Management Issue(s)

Managing large company/entity and integrating it with existing company.

For expansion either buying existing company (management skills required to retain the existing staff) or building offices from scratch (requires management skills to hire and manage local staff)

Question2: For each of the scenarios, chose the valid selection tool (only write it's label in the corresponding column). [7]

    A. One to one interview. B. Interview with the panel. C. Aptitude test. D. Situational assessment. E. Task assessment

Scenario	Tool
Software Development Project: A software development team is assigned complete a specific project. The quality, efficiency, and approach taken in the project determine their competency.	E
College Entrance Exams: For High school students to assess their readiness for higher education and determine eligibility for college admissions.	C
Job Interview: An individual is applying for a specific job role, and the company has to assess the candidate's qualifications, experience, and cultural fit within the organization.	A
College Admissions Interview: A university has to assess prospective students to evaluate their suitability for a competitive academic program, assess their goals, and understand their personality and motivation.	A

Research Grant Evaluation: Assessment of research grant applications to determine which projects receive funding. The assessment should evaluate the scientific merits, feasibility, and potential impact of each proposal.	B
In the selection process for medical residencies, the assessment is required where the candidates must diagnose and treat patients based on realistic medical cases to demonstrate their clinical competence.	D
Language school has to determine candidate's language learning potential or their level of proficiency in a foreign language.	C

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Question3: If the requirements or the business needs of a client are not clear, which of the following contract is better/low risk option for client? Also briefly explain the reason(s).

Custom-built software at a fixed price, Time and material [1+4]

Time and material is of low risk if the business needs/requirements are changing then with time and material client pays less.

Question4: Identify most appropriate Intellectual Property rights for each of the following. [6]

1. Software Suite Helping Small Businesses in Indonesia Manage their HR Management

Small businesses often struggle with payroll and human resources. In Indonesia, Fast8, a young startup launched a suite of integrated software to help SMEs and middle-sized companies systematize and automatize their HR management so they have more time to devote to their businesses. Fast8 has since focused on building software for the HR market, and in 2016, launched Gadjian, a cloud-based HR-integrated system offering an employee center, attendance records, shift scheduling, payroll, and leave management. Gadjian, which means payday, was designed to help SME owners and HR/finance managers of companies with less than 300 employees with their operational and administrative burdens. Other integrated applications followed Gadjian. Hadirr, an attendance management solution oversees the performance of mobile workers, remote employees, and multi-branch offices using geofencing and biometric face recognition technologies. Through Hadirr, employees can record their work attendance, and the system can monitor online timesheets, and employee work shifts, track field sales, and record overtime. Meanwhile, Payuung provides a one-stop shop for all employee benefits, including employee loans, insurance, and business financing support for business owners. The Fast8 suite automates processes and serves as a Fintech enabler, as it helps companies with health insurance, loans, and anything that can help them grow their business.

Fast8 paid particular attention to its branding. "We registered all of our brands, and we really racked our brains to find brands that customers would relate to," Afia said, explaining the choice of the name of their first product: Gadjian (payday). "It is catchy because people relate to it immediately." "We were always concerned about copycats, so we registered our brands as soon as possible." The company also wanted to register its unique source code to automate payroll.

Copyright as it is their implementation of existing concepts/ideas.

2. An object of this work is the provision of a method (i.e., software, firmware or hardware) to con trol and manage access to a flash memory so that the flash memory appears to the computer operating system 55 as a data storage device in which it is possible to read data from, and write data to, any flash memory location. A method that allows flash memory to emulate random access memories and allows existing computer operating systems to provide all other required support in the 60 same manner provided by standard random access memories and independent of the emulation method. Briefly, this invention contemplates the provision of a flash memory, virtual mapping system that allows data to be continuously written to unwritten physical ad- 65 dress locations. The virtual memory map relates flash memory physical location addresses in order to track the

location of data in the memory. The flash memory physical locations are organized as an array of bytes. Each of the bytes in the array is as signed a number or address by means of which the byte is physically accessible, referred to herein as the physi cal address space. Each of the bytes in the array has a second address, called the virtual address space. A table, called a virtual map, converts virtual addresses to physical addresses. Here it should be noted, the virtual address space is not necessarily the same size as the physical address space.

<mark>Patent, clearly an innovation.</mark>

3. While Google's search algorithm (its ranking algorithm) is a core component of Google's competitive advantage in the search engine market. Every year, Google makes thousands of changes to its algorithm to ensure it presents the most relevant results for search engine users. Additionally, the search engine giant constantly modifies its algorithm to prevent third parties from gaming the system and showing up higher on search results than they should. The impact is evident — Google remains the top search engine globally.

<mark>Trade Secret to get the competitive edge.</mark>

Question 5: Identify each as either Submarine patent or patent farming also briefly justify accordingly. [4]

1. **Symbol Technologies, et. al v Lemelson:** Jerome Lemelson was described as a prolific inventor who filed a large number of patent applications, beginning in the 1950's and continuing through to the 1970's. Lemelson made few prototypes to confirm his inventions, and he did not directly commercialize any of his inventions. Rather, Lemelson allowed many of his broad technology based patent applications to remain pending at the USPTO.

Over the years the applications were amended to include supporting data generated from subsequent developments made by others in the field and eventually, when the time was right, the applications were allowed to proceed to grant. Lemelson would then enforce royalty streams from products already on the market. The inventor eventually died in 1997, however, his practices were continued by his company; Lemelson Medical, Education & Research Foundation, Limited Partnership.

At issue in one particular case were a number of Lemelson's patents that related to machine vision and bar code identification technology. These applications were allowed to proceed to grant in the 80's and the Lemelson Partnership then demanded significant royalty streams from any products that utilized this technology. While a number of companies agreed to the licenses offered by Lemelson, three companies; Symbol Technologies Inc, Cognex Corporation and Telxon Corporation, counterclaimed against the patents.

Submarine patent as the patent came to surface later without influencing or as such.

2.

Rambus, a designer and manufacturer of computer memory technology. Rambus allegedly influenced a standards organization to adopt its technology as part of an industry standard, without disclosing that it had a patent application in process. By 2000, Rambus was enmeshed in a series of lawsuits with many of the world's leading memory chip makers, including Infineon in Germany, Micron Technology in the United States, and Hynix Semiconductor in South Korea. Rambus claimed that rival producers of dynamic RAM chips (shown in Figure 6-2) infringed its patents. Collectively, the penalties for patent infringement could have been worth hundreds of millions of dollars. Infineon and Rambus reached a settlement in March 2005 that required Infineon to pay Rambus $47 million for a global license to all existing and future Rambus patents for use in Infineon products until 2007.[32] In January 2009, a U.S. district court ruled that Rambus had destroyed documents pertinent to the Micron patent infringement lawsuit and barred it from enforcing patents against Micron.[33] In May 2009, the court ruled in favor of Rambus in its case against Hynix and ordered Hynix to raise money to pay Rambus $397 million for patent violations.[34]

Patent farming because the standard was influenced before the patent came to surface.