Name: Enrolment No:	UPES UNIVERSITY WITH A PURPOSE

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2019

Course: Maintenance of Health IT System **Semester: VIII**
Program: B.Tech. CS-HI **Time 03 hrs.**
Course Code: CSEG496 **Max. Marks: 100**
Instructions: **All sections are compulsory** **Nos. of page(s) : 2**

SECTION A

S. No.	All Questions are compulsory	Marks	CO
Q 1	Identify the types of topologies for networking environment	4	CO1
Q 2	Differentiate between guided and unguided transmission medium	4	CO2
Q 3	Explain SAN fabric	4	CO3
Q 4	Differentiate between modulation and multiplexing	4	CO3
Q 5	Differentiate between Disk Array & JBOD	4	CO4

SECTION B

	All questions are compulsory	Marks	CO
Q 6	Explain the requirement and benefit of SAN	10	CO4
Q 7	Identify and explain in detail the requirement of BPR	10	CO3
Q 8	Explain ILM in detail	10	CO3
Q 9	Identify and describe the NAS architecture **OR** Differentiate between NAS & SAN	10	CO5

SECTION-C

	Observe the given "Case Study" to attempt Q10 & Q11	Marks	CO
	Business Process Reengineering in Healthcare Managers use process reengineering methods to discover the best processes for performing work, and that these processes be reengineered to optimize productivity (Weicher et al. 1995). Hammer and Champy (1993) state that BPR refers to the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality and speed. Business processes are sequences and combinations of activities that deliver value to a customer (Coulson-Thomas 1996). A core business process usually creates value by the capabilities it gives the company for competitiveness. A limited number of such core business processes can be identified in any company, and enhancing those processes can lead to business improvement. Over the last few years, the reengineering concept has evolved from a "radical change" to account for the		

	contextual realism (Caron et al. 1994, Earl 1995). Davenport and Short (1990) prescribe a five-step approach to BPR. They argue that process reengineering requires taking a broader view of both IT and business activity, and of the relationships between them. The rhetoric of BPR also encourages fundamental step, or framebreaking change (Coulson-Thomas 1996). BPR is increasingly recognized as a form of organizational change characterized by strategic transformation of interrelated organizational subsystems producing varied levels of impact. This organizational change perspective recognizes that business process reengineering is not a monolithic concept but rather a continuum of approaches to process change (Kettinger et al. 1997). The faster the speed of change the more difficult and stressful it is to manage (Edwards and Walton 1996). With 80 percent of the expenses tied to patient care activities, hospitals and healthcare systems can garner substantial savings and improve clinical practices by better managing their labor, supplies, equipment, and facilities. The benefits of reinventing hospitals hold the tangible and realistic promise of radically reducing cost while dramatically increasing the quality of care provided (Harmon 1996). A case study at Karolinska Hospital in Sweden by Jacob (1995), and Hout and Stalk (1993) reveals that rising costs and a weakened economy in 1990s were forcing the government to reassess and reduce health care expenditures. Karolinska followed Boston Consulting Group's (BCG) Time-Based Management methods to reengineer the way work was done. BCG reorganized work at the hospital around patient flow by creating a new position of "nurse coordinator" in most departments. By redesigning operating procedures and staffing patterns, Karolinska was able to cut the time required for preoperative testing from months to days, close 2 of 15 operating rooms and still increase the number of operations per day by 30 percent. Operating theatre management often involves human resources, information systems, finance, physical plant design and utilization, capital equipment, clinical quality and efficiency and regulatory (Merriam-Webster 2002). Furthermore, surgical cases are conventionally classified into elective and emergency. An elective case is one whereby the patient can wait at least three days without sustaining morbidity or mortality. A surgical group comprises of several surgeons who share allocated operating theatre time. The term block time is the time allocated to each surgical group into which only the surgeons belonging to that surgical group can schedule their patients.		
Q 10	Compare the different other technologies which could have been used in the above scenario.	**20**	**CO5**
Q 11	Critically analyze the technological challenges in the above scenario. OR Design a detailed system architecture for the above scenario.	**20**	**CO5**

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SECTION A

S. No.	All Questions are compulsory	Marks	CO
Q 1	Identify the challenges of DAS	4	CO1
Q 2	Identify the different NAS components	4	CO2
Q 3	Explain Information lifecycle management.	4	CO3
Q 4	Differentiate between RAID 5 & RAID 4	4	CO3
Q 5	Explain the concept of parity bit	4	CO4

SECTION B

	All questions are compulsory	Marks	CO
Q 6	Explain the concept of BPR	10	CO4
Q 7	Differentiate between BPR & ERP	10	CO3
Q 8	Differentiate between NFS & CIFS	10	CO3
Q 9	Explain the SAN architecture in detail **OR** Explain the NAS architecture in detail	10	CO5

SECTION-C

	Observe the given "Case Study" to attempt Q10 & Q11	Marks	CO
	CASE STUDY The Department of Surgery at the Singapore Hospital oversees the operations of the surgical theatres. The main operating theatre complex at Block 3 of the hospital grounds is where surgical operations of different specialties take place. The local demand for surgery services has increased over the last two decades. The capacity of the operating theatres at the complex has reached high levels of utilization, and action is necessary to ensure that the department is able to cope with increasing patient load. Due to the increasing demand by patients on the services provided by this operating theatre complex and the acute shortage of manpower in the local health care industry, the Department of Surgery has to employ reengineering practices to achieve more efficient and effective utilization with its existing resources. There are a total of 21 operating theatres at the main OT complex at Block 3 of the		

	hospital. In the year 2000, the number of surgical operations conducted at the hospital was 59,377, of which about 45% were outpatient (day) surgeries. The daily average was 162. Out of the 21 theatres, 19 are allocated for elective surgery and operate 8 hours a day (from 8:30 to 17:30), and the remaining 2 are employed as emergency operating theatres and operate 24 hours a day. Historical data was extracted from the hospital's scheduling database for the period January to September 2001. The data includes the percentage utilization of all the operating theatres, and the surgeons' log of all the surgical operations conducted within the same period. Every day, each operating theatre is reserved for a specific clinical discipline to carry out surgical operations. Some of the operating theatres are exclusively reserved for a particular discipline, whereas others may be used by different disciplines for each day of the week.		
Q 10	Compare the different other technologies which could have been used in the above scenario.	**20**	**CO5**
Q 11	Critically analyze the technological challenges in the above scenario. OR Design a detailed system architecture for the above scenario.	**20**	**CO5**