UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, July 2020

Course: M.Tech   Semester: II
Program: CSE   Time 02 hrs.
Course: Decision Management System   Max. Marks: 100
Course Code: CSDA7004

Instructions:

No	Case Study	Marks	CO
1	In today's economy the importance of effective and efficient decision making has become increasingly important in order to stay competitive in a global market set. Obtaining most relevant data and outputs is the key for best decisions on every management level. That is why the application of decision support systems (DSS) is now irreplaceable in organizations that operate a state-of-the art decision making processes. So discusses Group Support Systems, Expert Systems, Knowledge Management Systems, Neural Networks, and Fuzzy Logic Systems focusing on a) The description of the methodology b) Their applications and software vendors c) current research d) New developments. Analyse above five systems followed up by a case study that provides an example for a real life application.	5 5 5 5 10	CO1 CO2 CO3 CO4 CO1
2	Decision support is a crucial function for decision makers in many industries. Typically, decision support systems help decision-makers to gather and interpret information and build a foundation for decision-making. Such systems may range from simple software systems to complex knowledge-based and artificial intelligence systems. Decision support systems can be database-oriented, spreadsheet-oriented or text-oriented in nature.		

	In healthcare, clinical decision support systems (CDSS) can play a significant role. Clinical decisions that are routinely taken by healthcare service providers are often based on clinical guidance and evidence-based rules derived from medical science. However, intelligent decision support systems (IDSS), through the interpretive analysis of large-scale patient data with intelligent and knowledge-based methods, "allow doctors and nurses to quickly gather information and process it in various ways in order to assist with making diagnosis and treatment decision". IDSS can be applied in healthcare in diverse areas such as the examination of real-time data from diverse monitoring devices, analyses of patient and family history for the purpose of diagnosis, reviews of common characteristics and trends in medical record databases and many more areas.		
	A) Demonstrates how a hybrid architecture combining the concepts of data mining (DM) and artificial neural networks (ANN) can be applied to patient data for intelligent decision support in healthcare.	20	CO4
	B) Discuss an IDSS in healthcare that gathers and incorporates healthcare-specific domain knowledge and performs intelligent actions, including learning and reasoning while recommending clinical steps to take and justify the outcomes.	20	CO3
3	Since models play a critical role in humans decisions processes, model management is considered very important function for decision support. Define in following by appropriate case studies/examples.		
	a) How Model management system can be designed to support group decision making.	**10**	CO2
	b) Basic concept of model management and functional requirement for group model management system.	**10**	CO2
	c) Architecture for group management system.	**5**	CO1
	d) Implementation issues.	**5**	CO1