Roll No: ----------

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, April 2018

Program: B.Tech. (CSE-MFT) **Semester – VIII**
Subject (Course): Business Intelligence **Max. Marks : 100**
Course Code : CSIB 383 **Duration : 3 Hrs**
No. of page/s: 02

Section-A (All Questions are compulsory) **[(7+8) x 2 = 30 Marks]**

Q1. How Corporate Performance Management tools are changing the future of Business Intelligence? [7]
Q2. Differentiate between tactical and strategic decisions. Which kind of visualization tools are required for supporting either of them? [8]
Q3. How OLAP is helpful in generating insights for a business? Explain all the four types of OLAP architectures with their primary differences. [8]
Q4. Explain Wayne Eckerson real-time monitoring capabilities and their usage in analyzing data to predict market trends. [7]

Section-B (Attempt any three) **[15 x 3 = 45 Marks]**

Q5. Explain the Kimball Lifecycle of BI Projects. [15]
Q6. Explain the process of Risk Management and Mitigation during planning phase. [15]
Q7. What is the role of Power user group and Middle class group with BI Design aspects? [15]
Q8. Describe the process of designing of development intelligence report and report documents. [15]
Q9. Explain the usage of Enterprise Performance Management (EPM) for an organization. [15]

Section-C (Compulsory) **[25 x 1 = 25 Marks]**

Q10. Design a BI model for multidimensional datasets captured using the details mentioned in the case below.

Case:
The BMW Oracle Racing organization won the 33rd America's Cup yacht race in Valencia, Spain on February 18, 2010. The BMW Oracle boat USA, backed by software billionaire Larry Ellison, beat Alinghi, the Swiss boat backed by Ernesto Bertarelli, a Swiss billionaire. It's always a spectacle when two billionaires go head to head for the prize. Lots and lots of money, world-class talent, and in this case, the best technologies and information systems in the world. In the end, the 114-foot USA won handily the first two races of a best-of-three series, reaching speeds over 35 miles an hour, three times faster than the wind. As far as experts can figure, USA is the fastest sailboat in history. So what kind of technology can you get for a $300 million sailboat? Start with the physical structure: a three hulled trimaran, 114 feet long, fashioned from carbon fiber shaped into a form descended from Polynesian outrigger boats over a thousand years old. The hull is so light it only extends six inches into the water. Forget about a traditional mast (that's the pole that holds up the sails) and forget about sails too. Think about a 233-foot airplane wing also made from carbon fiber that sticks up from the boat deck 20 stories high. Instead of cloth sails, think about a

stretchy aeronautical fabric over a carbon fiber frame that is hydraulically controlled to assume any shape you want, sort of like a stretchy garment hugs the body's bones. The result is a wing, not a sail, whose shape can be changed from pretty near flat to quite curved just like an aircraft wing. Controlling this wickedly sleek sailboat requires a lightning-fast collection of massive amounts of data, powerful data management, rapid real-time data analysis, quick decision making, and immediate measurement of the results. In short, all the information technologies needed by a modern business firm. When you can perform all these tasks thousands of times in an hour, you can incrementally improve your performance and have an overwhelming advantage over less IT-savvy opponents on race day.

For USA, this meant using 250 sensors on the wing, hull, and rudder to gather real-time data on pressure, angles, loads, and strains to monitor the effectiveness of each adjustment. The sensors track 4,000 variables, 10 times a second, producing 90 million data points an hour. Managing all these data is Oracle Database 11g data management software. The data are wirelessly transferred to a tender ship running Oracle 11g for near real-time analysis using a family of formulas (called velocity prediction formulas) geared to understanding what makes the boat go fast. Oracle's Application Express presentation graphics summarize the millions of data points and present the boat managers with charts that make sense of the information.
The data are also sent to Oracle's Austin data center for more in- depth analysis. Using powerful data analysis tools, USA managers were able to find relationships they had never thought about before.
Over several years of practice, from day one to the day before the race, the crew of USA could chart a steady improvement in performance. All this meant "sailing" had changed, perhaps been transformed by IT. Each crew member wore a small mobile handheld computer on his wrist to display data on the key performance variables customized for that person's responsibilities, such as the load balance on a specific rope or the current aerodynamic performance of the wing sail. Rather than stare at the sails or the sea, the crew had to be trained to sail like pilots looking at instruments. The helmsman turned into a pilot looking at data displayed on his sunglasses with an occasional glance at the deck crew, sea state, and competitors. Professional and amateur sailors across the world wondered if the technology had transformed sailing into something else. The billionaire winner Larry Ellison sets the rules for the next race, and the blogs are speculating that he will seek a return to simpler more traditional boats that need to be sailed, not flown like airplanes. Yet few really believe Ellison will give up a key IT advantage in data collection, analysis, presentation, and performance-based decision making.

CONFIDENTIAL

Name of Examination (Please tick, symbol is given)	:	**MID**		**END**	✓	**SUPPLE**	
Name of the College (Please tick, symbol is given)	:	**SOE**		**SOCS**	✓	**SOL**	
Program	:	**B.Tech.(CSE – MFT)**					
Semester	:	**VIII**					
Name of the Subject (Course)	:	**Business Intelligence**					
Course Code	:	**CSIB 383**					
Name of Question Paper Setter	:	**Dr. Durgansh Sharma**					
Employee Code	:	**40001612**					
Mobile & Extension	:	**9999014029, 1733**					
Note: Please mention additional Stationery to be provided, during examination such as Table/Graph Sheet etc. else mention "NOT APPLICABLE":							

FOR SRE DEPARTMENT

Date of Examination	:	
Time of Examination	:	
No. of Copies (for Print)	:	

Note: - Pl. start your question paper from next page

Roll No: ----------

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, April 2018

Program: B.Tech. (CSE-MFT) **Semester – VIII**
Subject (Course): Business Intelligence **Max. Marks : 100**
Course Code : CSIB 383 **Duration : 3 Hrs**
No. of page/s: 02

Section-A (All Questions are compulsory) **[(7+8) x 2 = 30 Marks]**

Q1. Explain the usage of OLAP and its types towards business intelligence solutions. [7]
Q2. Differentiate between operational and strategic decisions. Which kind of visualization tools are required for supporting either of them? [8]
Q3. Explain the differences between Dashboards and Scorecards design and development. How Metadata model is providing impact on both of them? [8]
Q4. How SDK of BI tool is helpful in easy implementation of enterprise business applications? [7]

Section-B (Attempt any three) **[15 x 3 = 45 Marks]**

Q5. Explain the stages of Business Intelligence Projects. [15]
Q6. How can you measure the success of BI solutions using TCO? [15]
Q7. What are the best practices of a BI design? [15]
Q8. Explain all the steps involved in creating a basic report for multidimensional databases. [15]
Q9. How does SSO help in authentication, authorization and access permissions for BI solution? [15]

Section-C (Compulsory) **[25 x 1 = 25 Marks]**

Q10. Design a BI solution for UPS parcel service using the details mentioned in case below:

United Parcel Service (UPS) started out in 1907 in a closet-sized basement office. Jim Casey and Claude Ryan—two teenagers from Seattle with two bicycles and one phone—promised the "best service and lowest rates." UPS has used this formula successfully for more than 100 years to become the world's largest ground and air package delivery company. It's a global enterprise with over 408,000 employees, 96,000 vehicles, and the world's ninth largest airline. Today, UPS delivers more than 15 million packages and documents each day in the United States and more than 200 other countries and territories. The firm has been able to maintain leadership in small-package delivery services despite stiff competition from FedEx and Airborne Express by investing heavily in advanced information technology. UPS spends more than $1 billion each year to maintain a high level of customer service while keeping costs low and streamlining its overall operations.
It all starts with the scannable bar-coded label attached to a package, which contains detailed information about the sender, the destination, and when the package should arrive. Customers can download and print their own labels using special software provided by UPS or by accessing the UPS Web site. Before the package is even picked up, information from the "smart" label is transmitted to one of UPS's computer centers in Mahwah, New Jersey, or Alpharetta, Georgia, and sent to the distribution center nearest its final

destination. Dispatchers at this center download the label data and use special software to create the most efficient delivery route for each driver that considers traffic, weather conditions, and the location of each stop. UPS estimates its delivery trucks save 28 million miles and burn 3 million fewer gallons of fuel each year as a result of using this technology. To further increase cost savings and safety, drivers are trained to use "340 Methods" developed by industrial engineers to optimize the performance of every task from lifting and loading boxes to selecting a package from a shelf in the truck. The first thing a UPS driver picks up each day is a handheld computer called a Delivery Information Acquisition Device (DIAD), which can access one of the wireless networks cell phones rely on. As soon as the driver logs on, his or her day's route is downloaded onto the handheld. The DIAD also automatically captures customers' signatures along with pickup and delivery information. Package tracking information is then transmitted to UPS's computer network for storage and processing. From there, the information can be accessed worldwide to provide proof of delivery to customers or to respond to customer queries. It usually takes less than 60 seconds from the time a driver presses "complete" on a DIAD for the new information to be available on the Web.

Through its automated package tracking system, UPS can monitor and even re-route packages throughout the delivery process. At various points along the route from sender to receiver, bar code devices scan shipping information on the package label and feed data about the progress of the package into the central computer. Customer service representatives are able to check the status of any package from desktop computers linked to the central computers and respond immediately to inquiries from customers. UPS customers can also access this information from the company's Web site using their own computers or mobile phones. Anyone with a package to ship can access the UPS Web site to check delivery routes, calculate shipping rates, determine time in transit, print labels, schedule a pickup, and track packages. The data collected at the UPS Web site are transmitted to the UPS central computer and then back to the customer after processing. UPS also provides tools that enable customers, such Cisco Systems, to embed UPS functions, such as tracking and cost calculations, into their own Web sites so that they can track shipments without visiting the UPS site. In June 2009, UPS launched a new Web-based Post-Sales Order Management System (OMS) that manages global service orders and inventory for critical parts fulfillment. The system enables hightech electronics, aerospace, medical equipment, and other companies anywhere in the world that ship critical parts to quickly assess their critical parts inventory, determine the most optimal routing strategy to meet customer needs, place orders online, and track parts from the warehouse to the end user. An automated e-mail or fax feature keeps customers informed of each shipping milestone and can provide notification of any changes to flight schedules for commercial airlines carrying their parts. Once orders are complete, companies can print documents such as labels and bills of lading in multiple languages. UPS is now leveraging its decades of expertise managing its own global delivery network to manage logistics and supply chain activities for other companies. It created a UPS Supply Chain Solutions division that provides a complete bundle of standardized services to subscribing companies at a fraction of what it would cost to build their own systems and infrastructure. These services include supply chain design and management, freight forwarding, customs brokerage, mail services, multimodal transportation, and financial services, in addition to logistics services. Servalite, an East Moline, Illinois, manufacturer of fasteners, sells 40,000 different products to hardware stores and larger home improvement stores. The company had used multiple warehouses to provide two-day delivery nationwide. UPS created a new logistics plan for the company that helped it reduce freight time in transit and consolidate inventory. Thanks to these improvements, Servalite has been able to keep its two-day delivery guarantee while lowering warehousing and inventory costs.