

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA – SEMESTER –I-EXAMINATION – WINTER-2022

Subject Code: 1519606

Date: 28/02/2023

Subject Name: Information Technology Management

Time:10:30 AM TO 01:30 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Use of simple calculators and non-programmable scientific calculators are permitted.

Q. No	Question Text and Description	Marks
Q.1	Explain following terms with examples: (a) Data Visualization (b) VSAT (c) Simplex Data Flow (d) Spyware (e) E-Governance (f) Organization Structure (g) Knowledge	14
Q.2	(a) Consider any organization of your interest. Describe the nature of business and explain any THREE strategic objective it can achieve using IS. How? (b) Consider any organization of your interest. Describe the nature of business and explain the different decision people take at different levels with suitable examples.	07 07
OR		
	(b) Think of different roles played by managers as per the managerial roles identified by the Mintzberg. Explain any THREE roles where you think information systems supports them the most with suitable examples.	07
Q.3	(a) What do you mean by computer network? Explain LAN, MAN and WAN. (b) Consider any organization of your interest. Describe the nature of its business. Explain the Management Information System in the context of selected organization.	07 07
OR		
Q.3	(a) Write a note on TCP / IP reference model. (b) Consider any organization of your interest. Describe the nature of its business. What kind of information you would like to have on your digital dashboard as a CEO of the organization? Why?	07 07
Q.4	(a) Write a short note on information security audit. (b) What do you mean Information Security? Explain various threats to IS with suitable examples.	07 07

OR

- Q.4** (a) Write a short note on Cloud computing. **07**
(b) You are appointed as a Chief Security Officer of IS. How would you explain that the people are the first line of defense in securing IS to the people working in the organization? **07**

Q.5 Analyze the case and answer the questions give at the end of the case

CASE STUDY

FIFA World Cup 2022 – Will IS be able to predict the winner?

In the 2010 South Africa World Cup, Paul the Octopus in Germany did his bit of 'precognition' fishing. In the 2018 Russia World Cup, there was the trio - Shaheen the camel in Dubai, Achilles the cat in the host country, and Marcus the pig in Britain - who were put on duty for their precognitive abilities. But what about the data scientists?

With all this talk of big data, AI and machine-learning, forecasting the outcome of World Cups using waves of data, elementary and insufficient statistical methods, and tricks of the statistical trade should surely make for more accurate prognostications than the regular set of oracular animals, right? Even investment banks like UBS, Goldman Sachs, and Macquarie used statistical models dedicated to analyzing economics and businesses to make World Cup predictions in 2014 and 2018. Trouble is, they got it embarrassingly wrong.

But that hasn't stopped the flood of predictions for Qatar 2022. In most (statistical) predictions, the whole tournament is simulated millions of times based on the teams' inferred abilities. Well, how to infer the teams' abilities is the tricky bit. The model developed by Matthew Penn, a statistics PhD student at Oxford University, suggests Belgium to have the highest chance of winning this time, followed by Brazil.

Penn's fellow Oxford mathematics modeler Joshua Bull has come up with his likely outcomes. The value of 'Expected Goals' in a match for each team is calculated using every international match since 2018 by giving more weight to more recent games, adjusting for Elo ratings - the difference between the ratings of the winner and loser determining the total number of points gained or lost after a game - between the teams, and taking into account how each team plays against stronger or weaker teams. A very simple probability model and a large number of simulations of World Cups are used to predict each match. Eventually, Bull predicts Brazil beating Belgium in the final on December 18.

In some models, individual player ratings are combined with team performance to create a rating for every international team. A University of Nottingham study also considers economic and climatic factors such as each country's per capita GDP, population, temperature, and home advantage. Argentina is found to be the possible winner in this model. Video game developer EA Sports has used HyperMotion2 technology and the dedicated FIFA World Cup 2022 ratings to simulate all 64 matches. It's predicted a Brazil-Argentina final where

Lionel Messi would score the winning goal - apparently his eighth goal of the tournament.

The beauty of so many predictions, as we know by watching post-election results news channels, is that someone will get it right - regardless of whether that someone got it right 'rightly' or by chance. The element of chance is certainly inscribed in every statistical model. And in the game of football itself. On a given match day, players can get injured, play poorly, lose their cool, be bribed to lose, or 'display magic', appear out of nowhere. Managers can also make disastrous strategies. The list of complicating factors is endless.

- (a) What kinds of systems are illustrated in this article? Describe some of the inputs of the systems. **07**
- (b) Compare Joshua Bull's and University of Nottingham's model of prediction. Which of these two models will prove more accurate? Why? **07**

OR

- (a) What factors are difficult to incorporate in the statistical model of prediction of FIFA world cup 2022? **07**
- (b) Will the IS be ever able to predict the outcome of Football world cup correctly? Why or why not? **07**
