

Reg. No.



MANIPAL INSTITUTE OF TECHNOLOGY

MANIPAL

(A constituent unit of MAHE, Manipal)

**VII SEMESTER B.TECH. (INFORMATION TECHNOLOGY /
COMPUTER AND COMMUNICATION ENGINEERING)**

END SEM EXAMINATIONS, DECEMBER 2019

SUBJECT: PROGRAM ELECTIVE VI - HUMAN COMPUTER INTERACTION [ICT 4010]

REVISED CREDIT SYSTEM

(28/11/2019)

Time: 3 Hours

MAX. MARKS: 50

Instructions to Candidates

- ❖ Answer **ALL** the questions.
- ❖ Missing data if any may be suitably assumed.

- 1A. Explain the structure of human memory model with diagrammatic illustration. 5
- 1B. Speech interface normally include two technologies: automatic speech recognition and speech synthesis. Why is speech technology so important in multimodal interaction design, even for normal users? What can be the possible advantages and disadvantages when designing a speech interactive system? 3
- 1C. Suggest points to handle implications of emotions through good interface design. 2
- 2A. Explain following terminology with a suitable application example. 5
 - i) Augmented Reality
 - ii) Ubiquitous Computing
- 2B. Define a stakeholder? Analyze the types & appraise the stakeholder for an airline booking system? 3
- 2C. Explain the characteristic suitable for Fig. Q. 2C. which affects the organization of stimuli. 2

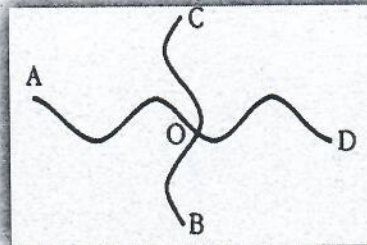


Fig. Q. 2C.

- 3A. How do 'golden rules' and heuristics help interface designers take account of cognitive psychology? Illustrate your answer with the design of Microsoft office word. 5
- 3B. Perform GOMS analysis for following design scenario. 3

Stockholm is an international city with many foreign visitors every year. The government would like to design a user friendly subway automatic ticket selling machine.

- 3C. What are the stages of execution and evaluation cycle? 2
- 4A. Explain any five Norman's design principles with a suitable example of each. 5
- 4B. Design an experiment to test whether adding recommendation of video contents to an e-learning interface will improve the learning efficiency of learners. Identify your hypothesis, participant group, dependent and independent variables, experimental design, task and analysis approach. 3
- 4C. What are the Characteristics of Computer Support Cooperative Work systems? 2
- 5A. Explain following universal designs for web application scenario. 5
- i) Flexibility to use
 - ii) Perception of information
 - iii) Tolerance for an error
 - iv) Equitable use
 - v) Low physical effort
- 5B. Explain the Principles to support usability. Consider the following usability objective. Theatre booking clerks with low motivation, no computing experience and no previous training, working in a small and hectic box office, are able to learn to reserve or book seats within a one-hour period. What measure could be taken and which techniques would you consider appropriate to test whether this objective was met? 3
- 5C. Comment on the usage of colours in emergency response panels. 2