

MANIPAL INSTITUTE OF TECHNOLOGY

(A constituent unit of MAHE, Manipal 576104)

I SEM M. Tech (MI) DEGREE END-SEMESTER EXAMINATIONS, NOV/DEC 2023 SUBJECT: DECISION SUPPORT SYSTEMS (BME 5119) (REVISED CREDIT SYSTEM) Thursday, 07th December 2023, 9:30 AM To 12:30 PM

TIME: 3 HOURS

MAX. MARKS: 50

Instructions to Candidates:

Answer ALL questions. Draw labeled diagram wherever necessary

1.	a)	Examine the factors accounting for successful implementation of Clinical Decision Support Systems (CDSS).	(5M)
	b)	Explain in brief the Future Uses of Clinical Decision Support Systems (CDSS).	(3M)
	c)	Illustrate any two advantages of using Artificial Neural Network (ANN) with application to CDSS.	(2M)
2.	a)	"If we have a patient with jaundice, how likely is it that he has hepatitis?" <i>Apply Bayes Rule</i> for the above statement and obtain the expression for <i>Pr(hepatitis jaundice)</i>	(4M)
	h)	Illustrate linear regression with the help of an example and corresponding graph	(3M)
	0)	induction inclusive regression with the help of an example and corresponding graph.	(3WI)
	c)	Explain any three examples of decision support systems that utilize data mining tools in healthcare settings.	(3M)
3.	a)	Explain the systematic review pipeline with suitable diagram.	(4M)
	b)	Illustrate any two advantages and disadvantages of production rules.	(4M)
	c)	Examine any two priorities of National Quality Strategy (NQS).	(2M)
4.	a)	Explain in detail the three core areas of ethical concern have emerged in discussions of computer systems that are used to remind, consult, or advise clinicians.	(5M)
	b)	Examine the four types of devices identified by Food and Drug Administration (FDA).	(3M)
	c)	Discuss any two key function of population health management.	(2M)

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5.	a)	Examine the guidelines for selecting and Implementing Clinical Decision Support Systems (CDSS).	(5M)
	b)	Illustrate any three differences between regression and classification.	(3M)

c) Discuss any two challenges related to population health management. (2M)