Question Paper

MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER M.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - JUNE 2024
SUBJECT: MIT6201 - INTERVENTIONAL RADIOLOGY
(2021 SCHEME)

Marks: 100   **Duration: 180 mins.**

Answer all the questions.

1)	Explain the principle of DSA. Elaborate on the types, principles, advantages, and disadvantages of each technique.	(20)
2)	Discuss in detail about indications, technique for Cerebral DSA. Illustrate the anatomy of the Circle of Willis.	(20)
3A)	List the types of embolic agents. Discuss about the mechanism of action of embolic agents.	(10)
3B)	Elaborate on Image-guided nerve blocks.	(10)
3C)	Explain indications and technique for Uterine Artery Embolization.	(10)
3D)	Outline the indications and technique for Vertebroplasty.	(10)
4A)	Discuss the types of stents and stent grafts.	(5)
4B)	Elaborate on radiation safety considerations for angiographic room design.	(5)
4C)	Summarize on emergency drugs.	(5)
4D)	Discuss about Selinger's technique.	(5)

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FOURTH SEMESTER M.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - JUNE 2024
SUBJECT: MIT6241 - MACHINE LEARNING IN HEALTH CARE
(2021 SCHEME)

Marks: 50   **Duration: 120 mins.**

Answer all the questions.

1)	i) Explain regression problem with an example. ii) Identify a simple classification problem. Explain how Machine learning solve such problem. Identify important stages of classification system and explain them.	(20)
2)	Describe the Navie Bayesian theorem with the terms associated. The symptoms of patient are detailed in the table. Among the suspected patients some had Diabetes and rest are normal. Calculate: i) Value of **Prior probability.** ii) Value of **Class conditional probability**. iii) **Posterior probability** value for the class having diabetes considering BMI.	(10)

Weakness	Dizziness	Always hungry	Tested for Diabetes
yes	yes	yes	**YES**
yes	no	no	**NO**
no	yes	yes	**YES**
no	no	no	**NO**
yes	yes	no	**NO**
yes	yes	no	**YES**
no	yes	no	**NO**
no	no	yes	**NO**
yes	yes	no	**YES**
yes	yes	yes	**YES**

3)	How an unsupervised learning is different from supervised. Explain with example in each case. Explain how clusters are generated.	(10)
4A)	Compare **McCulloch Pitts** (MP) neuron model and a Perceptron model.	(5)
4B)	Implement OR Boolean functions using **McCulloch Pitts** (MP) neuron model.	(5)

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MANIPAL ACADEMY OF HIGHER EDUCATION

FOURTH SEMESTER M.Sc. MEDICAL IMAGING TECHNOLOGY DEGREE EXAMINATION - JUNE 2024
SUBJECT: MIT6242 - HOSPITAL ORGANIZATION AND ADMINISTRATION
(2021 SCHEME)

Marks: 50   **Duration: 120 mins.**

Answer all the questions.

1)   Discuss on contributions of any two theories of management to industries. Explain the functions of a   (20)
      manager to run an organization. Elaborate on the steps of planning function of a project.

2)   Define Communication. Describe the importance of effective communication in hospitals/healthcare   (10)
      delivery system. Explain downward, upward, and lateral communication with suitable examples
      from organizational context.

3)   Discuss transformational leadership style and its impact on organizational performance. Give   (10)
      example/s of how transformational leadership style can motivate and inspire the team in achieving
      organizational goals.

4A)   Explain the 3-tier healthcare delivery system and few of public health services that can be   (5)
      implemented in any country?

4B)   Describe key components of planning an effective Emergency Medicine department with a brief   (5)
      note on ambulance services.

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