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Following Paper ID and Roll No. to be filled in your Answer Book.

PAPER ID : 33704 Roll No. 1 2 1 0 4 3 9 0 2 8

B. Tech. Examination 2022-23

(Odd Semester)

ARTIFICIAL INTELLIGENCE IN MECHANICAL ENGINEERING SYSTEMS

Time : Three Hours] *[Maximum Marks : 60*

Note :– Attempt all questions.

SECTION–A

1. Attempt all parts of the following : 8×1=8

   (a) Define automation.

   (b) Explain about mechanical engineering system.

   (c) Name machine learning methods.

   (d) What is an actuator?

   (e) Who coined the term machine learning in 1959?

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(f) Explain about MRP.

(g) Explain about CAPP.

(h) Define about ADC (Analog - Digital Conversions).

SECTION – B

2. Attempt any two parts of the following : 2×6=12

(a) Explain about five levels of automation and control in manufacturing.

(b) What are the main components of mechanical systems?

(c) Explain with block diagram how a export system works?

(d) Write how AI in 3D pritning is used?

SECTION – C

Note :– Attempt all questions. Attempt any two parts from each question. 5×8=40

3. (a) What is control system and its types? Explain with block diagram.

(b) What is machine learning? How its benefits can be used with AI in mechanical systems?

(c) Nearly all ctuafors can be classified into one of three categories, according to type of drive power. name and explain these three categories.

4. (a) What is error detection and recovery in an automated system?

(b) What is a sensors? How sensors can help in AI system development?

(c) Give some real world applications of AI in mechanical systems.

5. (a) Explain how knowledge acquisition is done and how it can be useful for a AI system?

(b) Write about how Humal-like machine vision and why is a very important component for AI development?

(c) How does adaptive control works? Explain in detail.

6. (a) Explain how AI can help in aditive manufacturing? Also mention five importance of aditive manufacturing.

(b) Explain about input/output devices for discrete data.

(c) Application of AI in thermal engineering can be utilized in how many ways? Explain in detail.

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