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Continuing Education Course #541
Artificial Intelligence in Engineering Design

1. Which is an example of a traditional algorithm?
 - a. Training & Input -> Model -> Output
 - b. Input & Rules -> Model -> Output
 - c. Rules -> Model -> Training -> Output
2. Which is an example of an AI algorithm?
 - a. Training & Input -> Model -> Output
 - b. Input & Rules -> Model -> Output
 - c. Rules -> Model -> Training -> Output
3. What is a neural network inspired by?
 - a. Spider web
 - b. Human brain
 - c. Decision tree
4. Which is NOT a learning method for Machine Learning?
 - a. Reinforcement Learning
 - b. Unsupervised Learning
 - c. Supervised Learning
 - d. Kinesthetic Learning
5. Which form of AI uses neural networks to make complex decisions?
 - a. Expert Systems
 - b. Deep Learning
 - c. XAI
 - d. Machine Learning
6. Which is considered a subset of deep learning?
 - a. Gen AI
 - b. XAI
 - c. Machine Learning
 - d. Cobot
7. What continuously monitors operating conditions to detect clues?
 - a. Data mining
 - b. LLM
 - c. Predictive maintenance
 - d. Expert system
8. Which is a model of a physical system with real operations data?

- a. Static model
 - b. Digital twin
 - c. Discrete model
 - d. Copilot
9. Which is NOT a reason there is often a lack of existing design data for AI data mining?
- a. Data is not digitally organized
 - b. Record drawings are optional
 - c. Design firms do not share data
 - d. Design decisions are not documented
10. Which is NOT a common application of smart infrastructure?
- a. Furniture
 - b. Security
 - c. HVAC
 - d. Power Grid
11. What is the purpose of XAI?
- a. Accuracy
 - b. Efficiency
 - c. Transparency
12. Which does NOT involve dynamic interconnections with autonomous vehicles?
- a. Automated Highway Systems
 - b. Electronic Toll Systems
 - c. Smart Highways
13. Which is a common AI application for structural design?
- a. Design Optimization
 - b. Humanoid
 - c. Chatbot
 - d. Regulatory submittal
14. What does FEA stand for?
- a. Featured Electronic Artificials
 - b. Finite Element Analysis
 - c. Finite Equipment Archetype
15. What does CFD stand for?
- a. Computational Force Delta
 - b. Computerized Functional Data
 - c. Computational Fluid Dynamics
16. Which is NOT currently a common application for AI?
- a. Predictive Maintenance
 - b. Permitting
 - c. Smart Grid Management
 - d. Circuit Design
17. Is a human engineer required for engineering projects?

- a. Yes
- b. No
- c. Depends on the location

18. A professional engineer that signs and seals drawings for construction is often called what?

- a. Lead Engineer
- b. Engineering Manager
- c. Engineer of Record

19. What defines "responsible charge" per NCEES Model Law?

- a. Valid license
- b. Direct control and personal supervision
- c. No other engineers helped
- d. Responsible for all the work in one discipline

20. Which category best describes having the final decision as to whether to utilize an AI program for design?

- a. Direct control
- b. Personal supervision

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