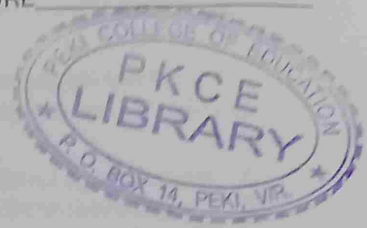


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DEPARTMENT OF TEACHER EDUCATION
SCHOOL OF EDUCATION AND LEADERSHIP
COLLEGES OF EDUCATION

END OF SEMESTER ONE EXAMINATIONS FOR LEVEL 200, 2023/2024
B.ED. PROGRAMME

COURSE CODE: **TEEG 209**

COURSE TITLE: **THEORIES IN THE LEARNING OF NUMERACY**

Instruction: Instruction: Answer all questions in Section A and any three questions in Section B on the answer booklet provided.

Time: 2 hours

SECTION A

[25 Marks]

Answer all the questions in this section on the answer booklet provided.

1. An occurrence that boosts the likelihood of a subsequent response is known as _____.
 - A. Association
 - B. Reconstruction
 - C. Reinforcement
 - D. Stimulus response

2. The activity theory emphasises that facilitators should recognise the dual role of tools in both constraining and facilitating social interaction. Therefore, they need to be _____.
 - A. employed judiciously to foster effective learning
 - B. employed with variations in their colours
 - C. utilised judiciously by an effective mathematics instructor
 - D. utilised to aid learners facing challenges.

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3. According to the theory of multiple intelligences, which intelligence does Peter possess if he can identify and comprehend his intentions, motivations, desires, and moods?
- A. Interpersonal intelligence.
 - B. Intrapersonal intelligence.
 - C. Naturalist intelligence.
 - D. Spatial intelligence.
4. The adaptation form that entails adjusting the internal cognitive structure to comprehend new information is known as _____.
- A. accommodation.
 - B. assimilation.
 - C. association.
 - D. discrimination.
5. The theory positing that human learning predominantly occurs through social interactions is known as _____.
- A. Behavioural theory
 - B. Constructivism theory
 - C. Situated cognition theory
 - D. Socio-cultural theory
6. Which of the following statements contradicts the principles of behaviourism?
- A. Behaviourism focuses on internal factors affecting behaviour.
 - B. Human behaviour is responsive to particular stimuli.
 - C. Our actions may appear voluntary, but they are predetermined.
 - D. The environment influences our behaviour.
7. Which of the following statements does NOT align with the principles of behaviourism?
- A. Desirable human behaviour is more the product of design than accident.
 - B. Inborn factors have a lot of influence on behaviour and learning ability.
 - C. It is an illusion to say that humans have free will; this can never be.
 - D. Some learning conforms to the basic stimulus-response model.
8. The theory that involves progressively moulding appropriate behaviour towards a desired outcome falls under the domain of _____.
- A. Behavioural theory
 - B. Cognitive theory
 - C. Constructivism theory
 - D. Situated cognition theory

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9. A collection of fundamental symbols along with rules for generating additional symbols is referred to as a _____ system.
- A. algebraic
 - B. counting
 - C. number
 - D. numeration
10. The foundation of constructivist theory lies in the principle that _____.
- A. learners construct their own knowledge
 - B. learning is a change in observable behaviour
 - C. learners necessitate a higher authority as a facilitator
 - D. learners need regular practice to achieve success
11. The beliefs that teachers hold about the teaching and learning of mathematics in the Early Grade classroom _____.
- A. contribute to the selection of the national goals
 - B. determine the products they choose to produce
 - C. influence their instructional strategies selection and enactment
 - D. influence their teaching and learning philosophy
12. An arrangement of concepts and actions that can be adjusted based on new information about the world is termed as _____.
- A. Class
 - B. Content
 - C. Schema
 - D. Strata
13. Assimilation, as a method of adapting schemas in mathematics, entails _____.
- A. breaking down a new schema into smaller units to fit into an existing one
 - B. incorporating some adjustments in existing schema to accommodate a new one
 - C. integrating an already established schema into a new one through trial and error
 - D. merging a new schema into the existing one without alterations but expansion
14. Learning in the iconic mode entails utilising _____.
- A. abstract entities in computations
 - B. hands-on experience in solving problems
 - C. manipulative instruments
 - D. visual mediums like pictures

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15. Three methods exist for transmitting a cultural tool from one individual to another. This does NOT include _____ learning.

- A. Collaborative
- B. Imitation
- C. Instructed
- D. Operative

16. A primary implication of Dienes' work is that large-group lessons should be reduced to accommodate for _____.

- A. expository teaching by the teacher
- B. individual differences among students
- C. students heavily relying on the teacher
- D. students' reliance on each other

17. Which psychologist's research led to the development of the Socio-Cultural Theory?

- A. Albert Bandura
- B. Aleksei N. Leont'ev
- C. Jean Piaget
- D. Lev Vygotsky

18. Repeated experiences lead to better learning. This is related to the law of _____.

- A. Effect
- B. Exercise
- C. Primacy
- D. Readiness

19. Utilising diverse scenarios and models to teach a specific mathematics concept in the Early Grade classroom exemplifies _____.

- A. Conservation principle
- B. Constructivity principle
- C. Multi-arithmetic principle
- D. Multi-embodiment principle.

20. Behaviourism focuses exclusively on objectively _____ behaviour.

- A. examinable
- B. measurable
- C. observable
- D. traceable

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21. Which of the following MOST accurately describes how we acquire knowledge, according to a constructivist perspective?
- A. We are born with most of our knowledge embedded within us.
 - B. We acquire knowledge solely by attending school.
 - C. We are sponges that absorb everything from authority figures.
 - D. We develop knowledge by consistently engaging with others.
22. The concept of self-regulated learning originates from _____.
- A. Bandura's research on observational learning
 - B. Pavlov's studies on the conditioned reflex
 - C. Skinner's work with juvenile delinquents
 - D. Thorndike's law of effect
23. According to behaviourism, learning is primarily a result of which of the following?
- A. Environmental stimuli and responses
 - B. Internal cognitive processes
 - C. Intrinsic motivation
 - D. Observational learning
24. The ZPD is a concept associated with which learning theorist?
- A. Albert Bandura
 - B. B.F. Skinner
 - C. Jean Piaget
 - D. Lev Vygotsky
25. According to cognitive learning theory, learning involves _____.
- A. Active engagement with experiences and interactions
 - B. Direct instruction from teachers
 - C. Memorization of facts and formulas
 - D. Passive reception of information

SECTION B**[75 Marks]**Answer any **THREE** questions in this section.

- | | | | |
|---|-----|---|----------|
| 1 | (a) | (i). Identify FIVE actions the mathematics facilitator carries out in applying behaviourism in the Early grade classroom. | 5 Marks |
| | | (ii). Explain the five actions identified in a(i) above. | 10 Marks |
| | (b) | Explain multi-embodiment principle. | 4 Marks |
| | (c) | i. What is Cognitive Theory? | 3 Marks |
| | | ii. List any THREE of the key components of Cognitive Theory. | 3 Marks |
| 2 | (a) | Identify THREE key issues highlighted by the <i>learning philosophy</i> of the Early Grade numeracy curriculum. | 6 Marks |
| | (b) | Briefly explain each of the key issues mentioned in (2a) above. | 9 Marks |
| | (c) | Briefly describe how each of the following manifests itself in the teaching and learning of mathematics in the Early Grade school: | |
| | | i. <i>Dyspraxia</i> | 3 Marks |
| | | ii. <i>Dyscalculia</i> | 3 Marks |
| | (d) | "What is Activity Theory" | 4 Marks |
| 3 | (a) | List any FOUR components of the Activity Theory | 4 Marks |
| | (b) | Explain FOUR of the criticisms of Cognitivism. | 12 Marks |
| | (c) | Explain THREE of the criticisms of Behaviourism. | 9 Marks |
| 4 | (a) | (i). What do we mean by "multiple intelligences"? | 3 Marks |
| | | (ii). Explain any THREE of the multiple intelligences. | 9 Marks |
| | (b) | (i). State the types of concepts in numeracy learning according to Richard Skemp. | 2 Marks |
| | | (ii). Explain the stated concepts in 4(bi), giving an example in each case. | 8 Marks |
| | (c) | Distinguish between a number and a numeral, giving an example in each case. | 3 Marks |
| | (a) | Give a practical illustration, involving at least four sensory of how you can apply the multi-embodiment principle while teaching an Early Grade classroom. | 8 Marks |
| | (b) | i. Explain "Situating Cognition Theory". | 3 Marks |
| | | ii. State TWO implications for the learner in Situating Cognition Theory. | 4 Marks |
| | | iii. STATE TWO implications for the teacher in Situating Cognition Theory. | 4 Marks |

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- (c) i. What does the acronym ZPD represent in Socio-Cultural Theory?
- ii. Explain what the ZPD is.

2 Marks

4 Marks