



FACULTY : Education
DEPARTMENT : Childhood Education
CAMPUS : SWC
MODULE : EDS10A2 & EDUSTA2
SEMESTER : First
EXAM : June 2018

ASSESSOR(S) : MRS B SHORT
MODERATOR : PROF L RAGPOT
DURATION : 2 HOURS **MARKS** : 100

NUMBER OF PAGES: 8 PAGES

INSTRUCTIONS:

1. Read the questions carefully.
2. Answer all the questions.
3. Number your answers correctly.
4. Write clearly and legibly.
5. Write your surname, name and student number on all answer books.

QUESTION 1: Jean Piaget

(20)

Six red plastic bottle-caps and six orange bottle caps are lined up next to each other. A 5-year-old and an 8-year-old can state that there are an equal number of bottle caps. When the red bottle caps are spread out to form a longer row, the 5-year-old states that there are more red bottle caps, but the 8-year-old maintains that there are still an equal number of bottle caps.

1.1 This demonstrates that the older child has reached which of Piaget's stages of development? Discuss the relevant features of that stage. **(8)**

1.2 Give definitions for the following Piagetian concepts and state the stages in which each of them are established:

- a) Egocentrism
- b) Conservation
- c) Object Permanence **(12)**

QUESTION 2: Lev Vygotsky

(15)

Case Study: Mpho is a child who had to build a 3D wooden puzzle, as shown in the picture below. Building this puzzle was too difficult a task for a child of her age, to complete alone.



2.1 Explain how you will assist Mpho in your class, taking into consideration the following two aspects that support learning according to Lev Vygotsky:

- (i) The Zone of Proximal Development and (ii) Scaffolding. **(10)**
- (ii) Discuss which instructional scaffolding technique you could make use of to assist Mpho and explain why? **(5)**

QUESTION 3: Brain, Mind and Education (MBE)

(20)

3.1 As part of professional development at the school where you teach the principal has requested that you attend the yearly “Mind, Brain, and Education (MBE)” conference. At the conference, you learned about the significance of emotions and learning. Your principal requests you to give feedback on what you have learned to the other teachers at the school. In a paragraph, detail the impact and importance that emotions have on learning. (10)

3.2 Neuroscientist Lisa Elliot in her article entitled *The Myth of Pink and Blue Brains* (2010) states that there are three early biases:

- Baby boys are modestly more physically active than girls.
- Toddler girls talk one month earlier, on average than boys.
- Boys appear to be more spatially aware.

Elliot believes that these biases are the starting point to how genders are treated differently by parents and teachers and therefore why gender gaps arise which result in why boys and girls begin to perform differently in the classroom. Discuss how these biases lead to gender gaps. (10)

QUESTION 4: Renate and Geoffrey Caine’s 12 Principles of Brain Based Learning

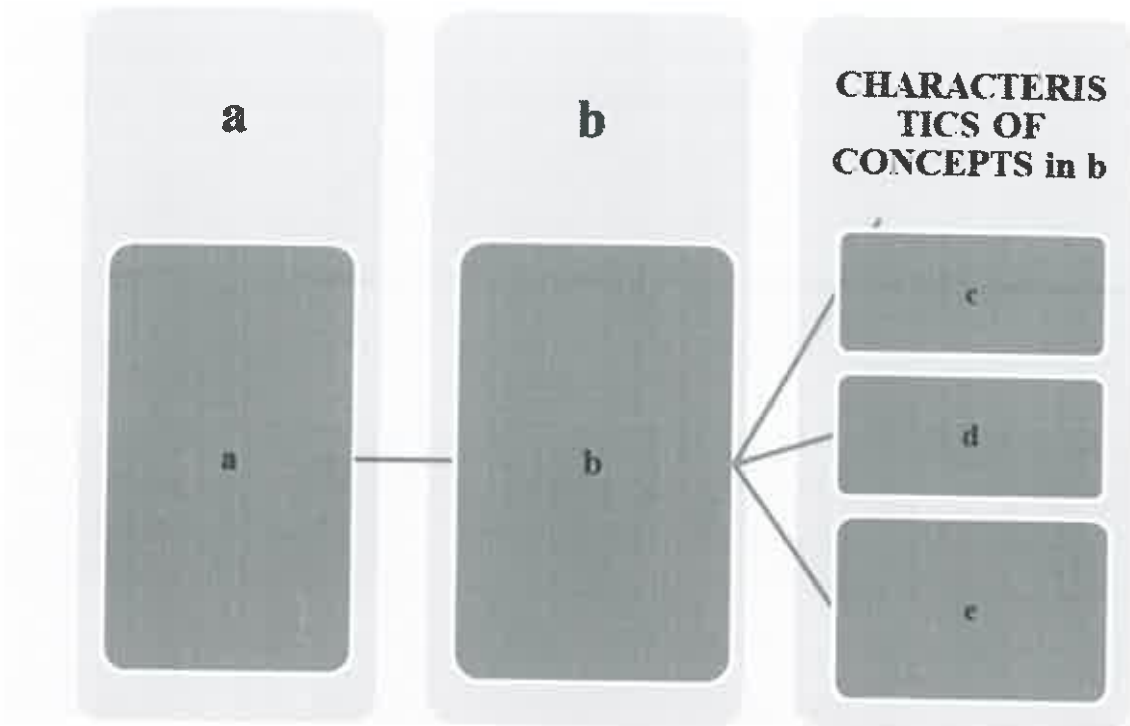
(10)

Renate and Geoffrey Caine developed twelve core principles of brain-based learning and three instructional techniques to apply these principals. Below are these principles and instructional techniques. They are miss-matched and you are required to find the pairs that go together, by writing the number and then the correct corresponding letter next to it in your answer booklet. e.g. 1) e

1) Complex Learning Is Enhanced by Challenge and Inhibited by threat.	a) Everything that affects our physiological functioning affects our capacity to learn.
2) The Brain Processes Parts And Wholes Simultaneously	b) To create learning environments that fully engage learners in an educational experience
3) Learning Involves Both Focused Attention And Peripheral Perception	c) The brain makes maximum connections when risk taking is encouraged
4) Learning Engages The Entire Physiology	d) Try to eliminate fear in learners, while maintaining a highly challenging environment.
5) Every Brain Is Uniquely Organized	e) Both brain hemispheres interact in each and every daily experience. They are separate but they work together to organize information
6) Orchestrated immersion	f) the consolidation and internalization of information by the learner in a way that is both personally meaningful and conceptually coherent
7) The Search For Meaning Is Innate	g) All education can be enhanced when real life embedding is adopted
8) Relaxed alertness	h) Trying to figure out or make sense of our experiences and environment is automatic.
9) We Understand And Remember Best When Facts And Skills Are Embedded In Natural, Spatial Memory	i) The brain absorbs information with which it is directly involved, but also pays attention to information outside of the direct involvement field.
10) Active processing	j) All humans have the same set of systems, yet we are all different based on genetic endowments, differing prior knowledge, and differing environments.

QUESTION 5: Susan Carey AND Alison Gopnik & Andrew Meltzoff (20)

5.1 Complete the following diagram on conceptual systems as proposed by Susan Carey. (10)



- a) Name both aspects as indicated by a
- b) Name both aspects as indicated by b
- c) Explain c
- d) Explain d
- e) Explain e

5.2 Alison Gopnik and Andrew Meltzoff propose a specific theory on children's cognitive development. What is this theory called and briefly outline what they propose about the way in which children learn. (5)

5.3 At a staff meeting the school principal asked you to explain the metaphor of Neurath's boat in relation to the Gopnik and Meltzhoff theory. (5)

QUESTION 6: Math cognition (15)

Prof Annemarie Fritz and her colleagues (Fritz & Ricken, 2008) have devised a model to describe early number concept development. You are asked to explain the five levels of this model to parents at parents' evening at your school.

You decide that the best way in which you could give them a description is with illustrations and examples.

Draw a diagram which outlines the five levels and then shortly describe each level and provide an appropriate example to accompany your description of each one.

Mark allocation:

Diagram and naming the five levels (5 marks)

Short description for each (5 marks)

Real life example (5 marks)

TOTAL: 100