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This paper consists of **THREE(3)** pages including the front page.  
Essay (6 questions – **answer 4** questions )

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**THE CHIEF INVIGILATOR**

This section consists of **SIX (6)** structured questions. Answer **FOUR (4)** questions only.

**QUESTION 1**

- (a) List **THREE (3)** type of machines involve in the paper making process and explain the characteristic one of the machine. (CLO1) (12 marks)
- (b) State the type of corrugated fiberboards. (CLO1) (6 marks)
- (c) Explain what is the Spiral and Convolute Cans. (CLO2) (7 marks)

**QUESTION 2**

- (a) Define of thermoforming and give the two types of it. (CLO1) (5 marks)
- (b) Explain with the help of a diagram, how does a compression moulding machine works. (CLO2) (12 marks)
- (c) Give **FOUR (4)** differences between the injection moulding and extrusion moulding machines. (CLO1) (8 marks)

**QUESTION 3**

- (a) Explain type of cans. (CLO1) (5 marks)
- (b) Explain how to produce a two – piece steel can. (CLO2) (10 marks)
- (c) Explain the process of forming a thin sheet. (CLO2) (10 marks)

**QUESTION 4**

- (a) Explain what are the glass fibers. (CLO1) (6 marks)
- (b) Explain **THREE (3)** categories of the glass shaping processes and give the examples. (CLO2) (9 marks)
- (c) List **THREE (3)** types of shaping of a flat and a tubular glass and explain them. (CLO2) (10 marks)

**QUESTION 5**

- (a) Draw and explain the press-on metal closures. (CLO3) (7 marks)
- (b) Draw and label the screw and lug closure. (CLO3) (8marks)
- (c) Explain **FIVE (5)** type of tamper evidence system and give one example of the product that use the system. (CLO3) (10 marks)

**QUESTION 6**

- (a) Draw and explain the single wall of corrugated board. (CLO1) (2 marks)
- (c) Give **FOUR (4)** type of defect in injection molding. (CLO1) (8 marks)
- (c) State the flute standards and the corrugated board grades in a table form. (CLO2) (15 marks)