

Total No. of printed pages = 8

**END SEMESTER EXAMINATION – 2019**

Semester : 6th

Subject Code : FPT-603

**TEA, COFFEE AND COCOA PROCESSING**

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks  
for the questions.

**Instructions :**

1. Questions on PART-A are compulsory.
2. Answer any *five* questions from PART-B.

**PART – A**

1. Answer each question in a word or single sentence :  $1 \times 25 = 25$ 
  - (i) Why leaf disruption step is important ?
  - (ii) In which part of tea plant highest levels of polyphenols are present ?
  - (iii) Where activity of polyphenol oxidase is most ?

[Turn over



- (iv) Theaflavins provide the attribute \_\_\_\_\_ and \_\_\_\_\_ to tea.
- (v) How theaflavins are formed ?
- (vi) What is the percentage of thearubigins in dry weight of black tea ?
- (vii) Which type of compounds impart aroma in tea.
- (viii) What is the heating temperature range in a pan for pan-firing type green tea ?
- (ix) Which of the following is NOT a step in black tea manufacture ?
- Rolling of the leaves on a horizontal roller
  - Putting the leaves in a vacuum drier to remove moisture
  - Roll breaking using sieves
  - None of the mentioned



- (x) Oolong tea is \_\_\_\_\_
- Mixture of green and black teas
  - Partial oxidation takes place
  - The leaves are greenish brown
  - All of the mentioned
- (xi) Which of the following tests do coffee beans have to undergo ?
- Visual test
  - Aroma test
  - Tasting by a cupper
  - All of the mentioned
- (xii) Statement 1 :  
Finer the grind, faster is the coffee prepared.
- Statement 2 :  
Roasting of coffee beans gives it their aroma and flavour.
- True, False
  - True, True
  - False, False
  - False, True



(xiii) Statement 1:

Fine plucking is the earlier half of tea plucking and the quality of tea is good.

Statement 2 :

Coarse plucking is the second half of tea plucking and the quality of tea is not so good.

(a) True, False (b) True, True

(c) False, False (d) False, True

(xiv) When cocoa cake is obtained ?

(xv) Cocoa butter is a bi-product in cocoa processing. (Write true / false)

(xvi) What is the final heating temperature range for Sen-Cha process green tea ?

(xvii) What is the percentage of catechins in dry leaves ?

(xviii) What is the percentage of moisture present in tea after withering ?

(xix) Plucking table is when tea is pruned and kept at a considerable height to be plucked by tea pluckers. (Write true / false)

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(4)



(xx) Difference of Green tea from Black tea is that —

(a) The oxidation process is omitted

(b) The tea leaves are steamed in a pan before being rolled so that the enzymes don't interact with air and oxidize

(c) Both of the mentioned

(d) None of the mentioned

(xxi) Ripened berries sink in water and unripe ones float on water. (Write true / false)

(xxii) The process of tasting coffee is called \_\_\_\_\_

(a) Cupping

(b) Green coffee

(c) Both of the mentioned

(d) None of the mentioned

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(5)

[Turn over



(xxiii) Which of the following is untrue ?

- (a) The coffee beans after milling are called 'Green coffee'.
- (b) Roasting converts green coffee into brown coffee beans.
- (c) During roasting, the coffee beans are heated in absence of oxygen called pyrolysis. They're kept moving so that they're de-void of moisture but at the same time don't get burnt.
- (d) None of the mentioned.

(xxiv) Statement 1 : Finer the grind, faster is the coffee prepared.

Statement 2 : Roasting of coffee beans gives it their aroma and flavour.

- (a) True, False
- (b) True, True
- (c) False, False
- (d) False, True

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(6)



(xxxv) Which of the following is NOT a step in black tea manufacture ?

- (a) Rolling of the leaves on a horizontal roller.
- (b) Putting the leaves in a vacuum drier to remove moisture.
- (c) Roll breaking using sieves.
- (d) None of the mentioned.

PART - B

Answer any five questions.

1. Define tea. What are the different species of tea? Discuss about the present status of tea production in India and compare the data with global production. 1+2+6=9
2. (a) Explain the various factors which affect the quality of tea during cultivation. 4  
(b) What is withering ? Explain the withering and fermentation steps. 1+4=5

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(7)

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3. (a) What is MINAS ? State the air emission standards and waste water discharge standards given by CPCB. 4
- (b) Explain the working of pulper in coffee processing. 5
4. Discuss in details the different steps in coffee processing. 9
5. (a) List out the various composition of mucilage and coffee pulp in percentage level and discuss its importance. 3
- (b) Explain the processing of any two bi-products obtained during cocoa processing. 6
6. (a) Explain the processing of cocoa in details. 6
- (b) Draw the product flowchart of cocoa beans. 3

