Q.P. Code 24418

Total Marks: 60
Duration: 2hrs

Q 1: a) Five points each; industrial package (2.5 M) and consumer package (2.5 M)
b) Any five advantages (2.5 M) and any five limitations (2.5 M)
c) Primary functions (2.5 M), Secondary Functions (2.5 M)
d) Commonly accepted definition (2 M), Description (3 M)

Q2: a) Enlist any eight factors (2 M), Description of various factors (8 M)
b) Advantages & Limitations paper based package (2.5 M), Advantages & Limitations plastic based package (2.5M)

Q3: a) del = 1.1, when t=7 and C=8.2
Hence, 8.2*(R/7) = (8.2/1.1)- (1.1/8.2) = 51.28
Hence, R = 6.26
ii) Required R' so that t =90, when Del = 3.75
(8.2R'/90) = (8.2/3.75) – (3.75/8.2)

(8.2R'/90)= 2.18 – 0.46 = 1.72

Hence, R' = 90 *(1.72/8.2)
R' = 18.8
Therefore, (R'/R) = 3 (approx.)
This is about 3 times value obtained with 25 micron, hence thickness required is 75 micron
(Formula 2 M, to find R 3M, to find R' 3M, final answer with unit 2M)

b) Modified atmospheric Packaging Concept explanation (5 M)

Q4: a) Drop Test – Description- procedure, equipment (5 M)
Vibration Test – Description- procedure, equipment (5 M)
b) Significance of conditioning statement (2M), description (3M)

Q5: a) Description various thermal processing treatments like high temp. filling, ultra high temp. filling, pasteurization ect. in brief (10 M)
b) When t = 1 day, del = 0.25, and C =20

(C*R)/1 = (20/0.25) – (0.25/20)

CR = 80 -0.0125
So, CR = 79.98
Approx.= 80
Time to gain 5 g, by substituting del =5
(80/t) = (20/5)- (5/20) = 20
(80/t) = (4-1)/4 = 3.75
Hence t = 80/3.75
t = 21.3 days
(formula 2M, Calculation 2M, final answer with unit 1 M)

Q6: a) Closure definition (2M)
Design consideration any 8 points (8 M)
b) Role of shape for package design, any five points (2.5 M)
Role of color for package design, any five points (2.5 M)