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DSE: Year 2007

Part - 1

1. (c) $(20, 0)$
2. (b) a vertical line
3. (b) $K = (3/2)L$
4. (c) $MR < 0$ in such a case
5. (a) A, B
6. (b) inflation is constant
7. (d) change the composition of monetary base
8. (a) always reduce borrowing
9. (a) improve it in the short run
10. (a) only raises the price level and the interest rate
11. (a) $f(x) = x^2$
12. (c) $\det A = \det B$
13. (b) $Df(x) = 0$ for some $x \in \mathbb{R}$
14. (d) In every legislature and every party, there exists a legislator who does not pay taxes
15. (c) singular
16. (b) $2/5$
17. (c) increases steadily from 0 to 1
18. (d) $4/7$
19. (b) (i) 0.16; (ii) 0.29
20. (c) 7.5

Part - 2

21. (c) $1200 - 488L + 72L^2 - 4L^3$
22. (d) (i) Rs. 4,80,000 and (ii) risk-averse
23. (a) (i) 1 km and (ii) Rs. 100
24. (a) Some firms will exit the industry, but the others will remain

25. (b) 9 apples
26. (a) 3.5 kg
27. (d) $((0, 0), (\sqrt{8}, 2), (3 - \sqrt{8}, 1))$
28. (c) Pareto efficient, because there is a bound on Agent 1's ability to consume.
29. (b) $\sqrt{2}$
30. (c) $((0, 0), (0, 3 - \sqrt{3}), (3, \sqrt{3}))$
31. $\lambda / [\alpha(1 + \lambda)]$
32. (b) $P/P^e = 1 + \lambda$
33. (a) an increase in the actual price level
34. (b) a decrease in the actual price level
35. (a) $\beta_2 / [1 - (\alpha_1 + \beta_1)]$ units
36. (c) $1 / [1 - (\alpha_1 + \beta_1) + (\gamma_1 \beta_2) / \gamma_2]$
37. (c) $(1 + \delta)w_2 > (1 + r)w_1$
38. (a) goes up
39. (d) Country 1 has a lower equilibrium level of output than country 2 and it runs a trade surplus vis-à-vis Country 2.
40. (b) (i) and (ii) remain unchanged; (iii) depreciates
41. (a) $\{(x, r) \mid f(x) \leq r\}$ is convex
42. (a) $2xe^{qr(x)} - e^x$
43. (d) converges to neither 1 nor -1
44. (d) $[-1, 1]$
45. (c) $(-1, 1)$
46. (d) $d(x, z) \leq d(x, y) + d(y, z)$
47. (b) $(A - B) \times C = (A \times C) - (B \times C)$
48. (c) Attains a saddle point
49. (c) 4.5
50. (d) During warm weather, my crops suffer from pests more than during cooler weather. Therefore, a warm environment must help pests to multiply.
51. (d) None of the above
52. $(3!3!)/6!$

53. (b) $5/18$
54. (b) $(\frac{1}{2}, \frac{3}{4}, \frac{1}{2})$
55. (b) 37.6 years
56. (a) 0.025
57. (d) 5, 0.5, 39
58. (d) 0.79
59. (b) There is a significant difference in the performance of the classes at the 5% level but no significant difference at the 1% level of significance
60. (b) There is no significant difference between the districts and the candidate is preferred in district A

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Part - 1

1. (d) S1 and S3 (Fischer's Index is ideal, it satisfies only these two)
2. (b) $(0.1)(0.99)^9$
3. (d) The sample standard deviation is one third its original value
4. (c) III and IV
5. (c) $g(y) = 2f(\sqrt{y})$ for any $y = 1, 4, \dots, 400$ and $g(y) = 0$ otherwise.
6. (b) The goods are perfect substitutes
7. (c) price of good x is less than or equal to price of good y
8. (c) price must be higher in the market with lower price elasticity of demand
9. (d) 5 and 10
10. (d) 1
11. (b) becomes flatter
12. (b) it leads to lower level of output in the equilibrium
13. (a) it leads to a higher steady state rate of growth
14. (c) expected currency depreciation must equal the currency differential plus the risk premium.
15. (c) 1, 3 and 4
16. (d) g is a linear function, f is not linear
17. (b) $-(yx^{y-1} + z^x \ln(z)) / (xz^{x-1} + y^z \ln(y))$
18. (c) a constant
19. (a) will change the sign of $\det A$
20. (b) 3

Part - 2

21. (b) Rs. 3000 to 4000
22. (c) 0.95 and 0.55