DSE 2010 Answer Key Prepared by: Amit Kumar Goyal<sup>1</sup>

1.(c) 
$$\frac{1}{3}$$

2.(d) the distribution has multiple medians

3.(b) 
$$\frac{1}{12}$$

4.(c) 
$$\frac{1}{8}$$

- 5.(a) the interval contains the parameter  $\beta$  with probability 0.95
- $6.(a) \succ$  is transitive
- 7.(c) constant marginal rate of substitution and diminishing marginal utilities
- 8.(d) lexicographically preferring  $x_1$  to  $x_2$
- 9.(d) both firms produce positive outputs with firm 2 producing more than firm 1
- 10.(a) it doubles
- 11.(c) always an automatic stabilizer in the long run
- 12.(d) all of the above
- 13.(b) government seigniorage goes down
- 14.(c) it affects the money demand function but does not affect the investment function
- 15.(d) an decrease in both the real and nominal demand for money
- $16.(b) \det A$
- 17.(c) has limit points 1 and -1 (Note: The sequence has no limit but it has two limit points.)
- 18.(d) all of the above are true
- 19.(c)  $\frac{1}{2}$  and  $\frac{1}{2}$
- 20.(d) 2
- 21.(c)  $2 \int_{a}^{b} f(x) dx$

22.(c) 
$$\frac{n}{n+1}$$

- 23.(b) X and Y are uncorrelated but dependent
- 24.(a)  $\frac{1}{2}$
- 25.(d)  $\frac{28}{45}$

26.(c) 
$$\frac{\sin^{-1}(x)}{\pi} + \frac{1}{2}$$
  
27 (d)  $\sigma^2$ 

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- 28.(c)  $\frac{21}{37}$
- 29.(b)
- 30.(a) not independent
- 31.(d) 1 gets (1,0) and 2 gets (1,1)

32.(a) 
$$\frac{p_x}{p_y} = 1$$

33.(c) 
$$\frac{p_x}{p_y} \le$$

- 34.(c) is empty
- 35.(a) the lottery (0, 0.11, 0.89)

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36.(c) 
$$A$$
 gets  $\left(\frac{1}{2}, \frac{3}{2}\right)$  and  $B$  gets  $\left(3, \frac{1}{2}\right)$ 

- 37.(d)  $x_d = x^*$  and  $y_d = y^*$
- 38.(d)  $p_1 = 3$  and  $p_2$  is 2 or 3
- 39.(a) firm 1's optimal isoprofit curve and firm 2's reaction curve intersect at  $(q_1, q_2)$  and are tangential at  $(q_1, q_2)$
- 40.(b) a non-credible threat
- 41.(c) real wage is unchanged and real money supply is unchanged.
- 42.(b) budget will go into surplus

43.(a)  $\beta > \frac{\gamma}{\delta}$ 

- 44.(c) for high values of P it will be vertical; for some mid-range values of P it will be downward sloping; for low values of P it will be vertical again
- 45.(d) shifts to the right
- 46.(a) shifts up

47.(c) 
$$\frac{1}{1 - c_B + \lambda(c_B - c_A)}$$

- 48.(b) equilibrium output unambiguously decreases
- 49.(a) equilibrium output unambiguously increases
- 50.(a) equilibrium output unambiguously increases
- 51.(b) at most one
- 52.(a) (i) is true and (ii) is false
- 53.(a) (i) is true and (ii) is false
- 54.(c) g is increasing in x but may or may not be increasing in y
- 55.(d) none
- 56.(c) Z
- 57.(a) X
- 58.(b) f has a minimum but not a maximum over (a, b)
- 59.(a)  $f(x) \leq 0$  for every  $x \in [a, b]$
- 60.(a) g is non-decreasing.