

Bachelor of Arts Examination 2018
(2nd year, 3rd semester)
Economics (Honours)
Mathematical Economics—II (OLD)

Time: 2 Hours

Full Marks: 30

Answer any three questions: 3X10

- 1) For a macro-economic model (all the variables have their usual meanings)
Product market equations:
 $Y=C+I+140$
 $C=62+0.7 Y$
 $I=50-100 i$
 Money market equations:
 $176=0.25 Y-200 i$
 Find out the equilibrium values of the variables (Y and i) involved in the model. 10
- 2) Find out the changes in the equilibrium values of the outputs for changes in their final demands from the following input-output model (all the variables have their usual meanings): 10
 $0.3 x_1+0.2 x_2+0.5 x_3+d_1= x_1$
 $0.2 x_1+0.4 x_2+0.2 x_3+d_2= x_2$
 $0.4 x_1+0.3 x_2+0.1 x_3+d_3= x_3$
- 3) For a market model given as (all the variables have their usual meanings):
 $Q^d=\alpha-\beta P \quad (\alpha,\beta>0);$
 $Q^s=-\gamma+\delta P \quad (\gamma,\delta>0);$
 price is adjusted according to following formula:
 $dP/dt=j(Q^d - Q^s) \quad (j>0),$
- a) Find out the time path for price and infer about the nature and the stability of the equilibrium. 7
- b) What happens to the equilibrium if j becomes negative? 3
- 4) For a multiplier-accelerator model given as (all the variables have their usual meanings):
 $Y_t=C_t+I_t+G_0$
 $C_t=\gamma Y_{t-1} \quad (0<\gamma<1)$
 $I_t=\alpha(C_t-C_{t-1}) \quad (\alpha>0)$
 Find out the time path for income and infer about the nature and the stability of the equilibrium. 10
- 5) For a market model with price expectation given as (all the variables have their usual meanings):

[Turn over

$$Q^d = \alpha - \beta P + mP' + nP'' \quad (\alpha, \beta, m, n > 0);$$

$$Q^s = -\gamma + \delta P \quad (\gamma, \delta > 0);$$

Find out the time path for price and infer about the nature and the stability of the equilibrium.