

Jadavpur University
 MA EXAMINATION, 2022
 1st Year, 2nd Semester
 DEPARTMENT OF _____Economics_____

PAPER NAME: General Equilibrium and Social Welfare
Paper Code:

Time: Two Hours

Full Marks: 30

Group A

Answer any two 7.5+7.5

1. In a 'R' fold replica economy show that core will shrink as the economy is replicated. Then prove the **Edgeworth-Debreu-Scarf theorem**.
2. Prove the existence theorem of general equilibrium price vector for a 'n-agent and k commodity exchange economy with the help of 'Brouwer's Fixed Point Theorem'.
3. Diagrammatically show the existence of Rawlsian Form of Social welfare function mentioning importance of underlying assumptions and Hammond equity.

Group B

Answer any three 3X5=15

4. i) Consider a two-person pure exchange economy with two good (Edgeworth Box).

	Person 1	Person 2
Endowments(x, y)	90, 10	10, 90
Utility		

Show that the following allocation is in the core of the economy:

$$(x^1, y^1) = (40, 40), (x^2, y^2) = (60, 60).$$

Now suppose that, the economy is replicated twice. In the 2-fold replica economy, consider the same allocation for type 1 individuals and type 2 individuals

$$(x^1, y^1) = (40, 40), (x^2, y^2) = (60, 60).$$

Is this allocation still in the core? 5

5. i.) In a two-commodity economy let p be the price of commodity 1 in terms of commodity 2. Suppose the excess demand function for commodity 1 is given by

$$1 - 4$$

How many equilibria are there? Are they stable or unstable? 3

- ii.) Consider an economy with two individuals and with the preference pattern:

for ω_i the endowments are. Derive the equation for the contract curve. 2.

6. In an exchange economy two consumers with having the following utility functions
 $u_1(x_1, x_2) = x_1 + x_2$
 and
 $u_2(x_1, x_2) = x_1 + 2x_2$
 Find a Walrasian equilibrium for this economy. 5

7. Consider an exchange economy with two goods and three persons.
 A demands equal quantities of the two goods. B's expenditure on good 1 is always twice his expenditure on good 2. C never uses good 2. If the original endowments are respectively (5; 0), (3; 6) and (0; 4), compute the equilibrium price ratio. What would be the effect on equilibrium price levels if
 (a) 4 extra units of good 1 were given to A;
 (b) 4 units of good 1 were given to C? 5.

8. Rob Crusoe has a utility function $U(x) = (24 + x_1)x_2$. The consumer begins with 24 units of time per day and supplies some of these hours as labour time to a firm. (So $x_1 < 0$.) He purchases commodity 2.
 (a) If the consumer has a dividend D each day and the price vector is p , what is his budget Constraint.
 (b) Solve for his utility maximizing choice
 (c) Rob owns a firm with production function $Y = L^\alpha$ where L is the labour demand and Y is the supply of commodity 2.
 (d) The firm is a price taker. Solve for the profit maximizing input, output and profit given the price vector p .
 (e) If Rob Crusoe is the only person on an island with production set and preferences as given above, what will he choose? 5.