

INDIAN STATISTICAL INSTITUTE, BANGALORE

B. MATH (HONS.) THIRD YEAR

ECONOMICS I: MACROECONOMICS

Final Examination

Date: November 20, 2019

Maximum Marks: 50

Duration: 3 Hours

Section A: One-mark Questions

[20 Questions* 1 = 20 marks]

1. "Inflation is generally procyclical" means

- a) higher rates of inflation tend to precede periods of high economic growth.
- b) the average price level rises in an economic expansion but remains constant after a business cycle peak.
- c) the rate of inflation tends to rise in periods of high economic growth and fall in periods of low economic growth.
- d) both b and c.

2. Rising inventories usually indicate:

- a) an economy that grows faster than expected.
- b) an unexpectedly slowing economy.
- c) an unexpected increase in sales.
- d) a rise in import tariff.

3. What is Okun's Law?

4. Consider the quantity theory of money equation. Suppose the actual money supply is M^* which is not equal to M ; according to the neutrality principle, the variable that would adjust to achieve equilibrium is:

- a) V
- b) Y
- c) P
- d) M

5. The depreciation of a country's real exchange rate would increase the export of goods, and make the economy more competitive. True or False?

6. Real GDP is defined as:

- a) Nominal GDP adjusted for population change.
- b) Nominal GDP adjusted for capacity utilization.
- c) Nominal GDP adjusted for exchange rates.
- d) Nominal GDP adjusted for inflation.

7. To derive GDP from market prices to factor cost:

- a) Add indirect taxes.
- b) Deduct indirect taxes and deduct subsidies.
- c) Deduct indirect taxes and add subsidies.
- d) Adjust for inflation.

8. Change in inflationary expectations shifts aggregate supply curve leftward (downward). True or False?

9. What is a liquidity trap?

10. The monetary base is:

- a) The sum of currency in circulation and commercial bank reserves.
- b) The foreign exchange reserve held by the central bank.
- c) The official reserves held by commercial banks.
- d) The sum of currency in circulation and the currency held by commercial banks.

11. Monetary aggregates (M1, M2, etc.) describe accumulating definitions of money with increasingly lower liquidity. True or False?

12. Which of the following is NOT a leakage from the circular flow of income and expenditure

- a) Imports
- b) Government purchases
- c) Savings
- d) Taxes

13. Child care provided by a licensed day care centre is not included in GDP calculation. True or False?

14. If nominal money stock (M) is Rs. 200 million, the size of nominal GDP is Rs. 400 million. Calculate the velocity of money.

15. An increase in the nominal GDP by 6% can correspond to...
- a) a decrease of real GDP by 4% and an increase of prices by 10%.
 - b) an increase of real GDP by 5% and a decrease of prices by 1%.
 - c) a decrease in real GDP by 3% and an increase of prices by 3%.
 - d) an increase of real GDP by 9% and an increase of prices by 3%.

16. Budget surplus refers to:

- a) an excess of government outlays over taxes.
- b) an excess of government revenues over total outlays.
- c) the difference between fiscal deficit and interest payments.
- d) the sum of total expenditure and borrowings.

17. According to the 2017-18 data, the unemployment rate in India is:

- a) less than 2 per cent
- b) between 2 per cent and 5 per cent.
- c) between 5 per cent and 10 per cent.
- d) more than 10 per cent.

18. Which of the following are not assets of a commercial bank?

- a) Government bonds
- b) Reserves
- c) Deposits with the Central Bank
- d) Savings deposits

19. Construction is part of the tertiary sector. True or False?

20. Suppose government increases the spending by Rs. 150 million, but at the same time increases taxes by Rs. 150 million. The equilibrium output will change by Rs. 150 million. True or False?

Section B: Two-mark Questions

[6 Questions * 2 = 12 marks]

21. The total adult population in a country X is 250 million. It is reported that 150 million are in the labour force. There are 100 million employed persons. Calculate the following:

- a. Worker population ratio.
- b. Unemployment rate.

22. Explain the impact of the oil-price shock for an economy that is already in a recession, with a diagram.

23. What is the difference between a cyclical deficit and a structural deficit?

24. Explain if the following would be included in the calculation of GDP or not.

- a. The rise in life expectancy over time.
- b. The iron that goes into the steel that goes into a refrigerator bought by a consumer.
- c. The sale of a new car.
- d. Salaries paid to Koreans workers working in India.

25. What are the two main accounts in the balance-of-payment account, and how do they differ?

26. Explain why efficiency wages can create unemployment in the economy.

Section C: Three-mark Questions

[4 Questions * 3 = 12 marks]

27. For each of the following, indicate which curve in the AS/AD model shifts (initially), and in which direction(s):

- a. An adverse supply shock
- b. An increase in government spending
- c. A monetary contraction designed to lower the long-run inflation rate

28. What happens in the Keynesian model if households decide to be spend less and save more? Do the following exercise to find out.

a. Suppose that the economy starts out in a situation with $C = 20 + .8Y$ and Intended Investment = 60. Carefully graph the resulting AD curve, labelling the levels of aggregate demand that result when income (Y) is equal to 0, 300, 400, and 500.

b. What is the equilibrium level of income in this initial case? What is the equilibrium level of saving?

c. Now suppose that people decide they want to save more of their income and spend less of it. In fact, their new level of autonomous consumption is 0, so the new consumption function is just $C = 0.8Y$. Calculate the levels of consumption and aggregate demand that would result from incomes of 0, 300, 400, and 500. What is the new equilibrium level of income? What is the new equilibrium level of saving?

29. Suppose the Central Bank makes an open market purchase of bonds, what would happen to the following?

a. federal funds rate.

b. money supply.

c. aggregate demand in the economy.

30. What is Philips curve? Under what conditions can stagflation occur? Explain with shifts in AS/AD curves.

Section D: Six-Mark Question

[1 Question * 6 = 6 marks]

Answer any one of the following

31. The consumption, desired investment, and government spending in a closed economy are:

$$C = 360 - 200r + 0.1Y$$

$$I_d = 120 - 400r$$

$$G = 120$$

a. Find an equation for saving, S , in terms of output Y and the real interest rate r . What value of the real interest rate clears the goods market when $Y = 550$? When $Y = 600$? When $Y = 650$? Use the goods market equilibrium condition to derive the IS curve. Graph the IS curve.

In the same economy, the real money demand function is,

$$M_d / P = 100 + 0.2Y - 2000i$$

Assume that $M = 300$, $P = 2$, and $\pi_e = 0$, where, i is the nominal interest rate, and π_e is the expected inflation rate. What is the real interest rate r that clears the money market when $Y = 550$?

Or

32. Consider the following economy:

$$C = 200 + 0.5Y - 500r$$

$$I_d = 200 - 500r$$

$$L = 0.5Y - 250r$$

$$G = 150$$

$$M = 4900$$

$$Y = 1000$$

a. What are the general equilibrium levels of the real interest rate r , the price level P , aggregate consumption C , and desired investment I_d ?

b. Suppose there is a beneficial supply shock and the full-employment level of output Y increases temporarily to 1050. Show what happens to the economy in a graph. What will be the new long-run equilibrium value of r ? What is the new price level P ?