INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR
End-Spring Semester Examination 2022-23

Date of Examination________ Session: (FN/AN)________ Duration: 2 hrs. Full Marks: 30
Subject No.: EM21204/HS21204 Subject: Macroeconomics II
Department/Center/School: HSS
Specific charts, graph paper, log book, etc., required: No
Special Instructions (if any): All questions are compulsory.

1. Following Fisher's inter-temporal choice, discuss how a consumer attains optimum consumption. How optimization is attained under the conditions that borrowing constraints are (i) binding versus (ii) not binding?
   An individual follows a two-period Fisher's model of consumption. He earns ₹200 in the first period and ₹100 in the second period. He can borrow or lend at the interest rate, r. If he consumes ₹150 in the first period and ₹160 in the second period, find the interest rate. If the interest rate increases, what will happen to his consumption? 4+2
2. Derive Permanent Income and explain how the Permanent Income Hypothesis can solve the consumption puzzle? 3
3. Define and distinguish between cost-push and demand-pull inflation from the perspectives of output and price behaviour. Derive cost-push inflation through mark-up pricing and prove that the proportionate change in price is equal to the difference between the rate of wage inflation and the rate of labour productivity. 2+2
4. Prove how inflation is related to money supply and real money demand. In this context, explain how the following factors affect real money demand and the inflation rate. 2.5+2.5
   a) Rate of interest
   b) Real Income
   c) Financial Innovation
   d) Expected Inflation
   e) Price level
5. Derive the Phillips curve from the short-run supply curve and prove that there exists a trade-off between inflation and unemployment in the short-run. Under what conditions does trade-off cease to exist and why? 3+3
6. If inflation is not fully indexed, what kinds of additional costs does it cause? Given below is the information regarding the income tax slabs and the tax rates in India:

Income bracket (₹)	Income tax rate (%)
Up to 300,000	Nil
300,001 – 500,000	10
500,001 – 8,00,000	20
800,001 – 10,00,000	25
Above 10,00,000	30

Estimate the tax liability of a person with a current total income of ₹9.50 Lakh. If the annual inflation rate is 30% and consequently, the dearness allowance is revised by 30%, estimate his new tax liability. If income tax brackets are fully inflation-indexed, how the tax rates and brackets should be revised? 3+2

P.T.O.

9.5×1,00,000
9,50,000

7. Explain the money creation mechanism of the banking system under the following two conditions: (a) the public hold no currency; (b) the public hold currency. Offer implications of the above two conditions for the money supply. 2+2

8. The following information is available for an economy:

Currency with the public	₹4,000 Crore
Bank's reserves	₹1,000 Crore
Currency-deposit ratio	0.4
Central Bank's reserve ratio	0.10

(a) Find the value of the money supply in the economy.

(b) The currency-deposit ratio changes to 0.2. If the Central Bank intends to maintain the money supply at the present level by changing the reserve ratio, what will be the new reserve ratio? 4

9. What are the major instruments of monetary policy and how do they affect GDP growth and inflation? In this context, discuss the measures under financial sector reforms the Indian economy has undertaken in the post-reforms period and offer their implications. 2+2

The following estimates are extracted from the Union Budget for the year 2020-21.

Particulars	₹ in Crore
Tax Revenue	1,10,800
Non-tax revenue	44,135
Recoveries of Loans	8,900
Other Capital Receipts	4,500
Non-plan Expenditure:	
On Revenue Account (of which interest payment is Rs.75,000 Crore)	1,56,202
On Capital Account	28,620
Plan Expenditure:	
On Revenue Account	42,560
On Capital Account	26,234
Borrowings/other Liabilities	90,015

Find the values of revenue receipts, capital receipts and fiscal deficit. 3

10. Distinguish between the following (Provide most appropriate answers): 1x6

(a) Plan Expenditure and Non-Plan Expenditure

(b) Cash Reserve Ratio and Statutory Liquidity Ratio

(c) Pro-Cyclical Fiscal Policy and Counter-Cyclical Fiscal Policy

(d) Laspeyre's Index and Paasche's Index

(e) Wholesale Price Index and Consumer Price Index

(f) Narrow Money and Broad Money