END-SEMESTER EXAMINATION, January - 2024
Principles of Macroeconomics (HSS2021)

Programme: B.Tech　　　　　　　　　　　　　**Semester: 3rd**
Full Marks: 60　　　　　　　　　　　　　　　**Time: 3 Hours**

Subject/Course Learning Outcome	*Taxonomy Level	Ques. Nos.	Marks
CO1: Be able to analyze how different economies across the globe, gains from trade by using absolute and comparative advantage as the basis of trade.	L3, L3, L3	1.(a,b,c)	6
CO2: Be able to construct Consumer Price Index (CPI) and analyze its impact on the cost of living and standard of living of the consumers in an economy.	L3, L3,L3 L3	2.(a,b,c) 3(c)	6 6
CO3: Be able to measure national income and economic growth, and analyze their relationship with consumption, saving, investment, and productivity	L3, L3 L3, L3, L4 L3, L3, L4 L3, L4, L4	3.(a,b) 4.(a,b,c) 5.(a,b,c) 9.(a,b,c)	6 6 6 6
CO4: Be able to analyze the role of financial markets and financial intermediaries in coordinating the activities of the savers and investors, and various tools used in regulating money supply in the economy.	L3, L4, L3	8.(a,b,c)	6
CO5: Be able to analyze the economic feasibility of project proposals.	L3, L3, L3	6.(a,b,c)	6
CO6: Be able to measure unemployment, and analyze the short-run fluctuations in economic activities through aggregate demand and aggregate supply model.	L3, L3, L4 L3,L3,L3	7.(a,b,c) 10(a,b,c)	6

*Bloom's taxonomy levels: Remembering (L1), Understanding (L2), Application (L3), Analysis (L4), Evaluation (L5), Creation (L6)

Answer all questions. Each question carries equal mark.

1.		Here are the numbers of hours needed in Belarus and Belgium to produce a unit of television and computer.	

Country	Television	Computer
Belarus	18 hours	6 hours
Belgium	16 hours	4hours

	(a)	Compute the unit opportunity cost of producing television and computer both for Belarus and Belgium.	2
	(b)	Identify which country has an absolute advantage in producing television and computer? Which country has the comparative advantage in producing television and computer?	2
	(c)	Anna can read 200 pages of economics or 500 pages of history in 10 hours. She spends 5 hours per day studying .Graphically	2

		represent Anna's production possibilities frontier for reading economics and history per day.	
2.	(a)	The cost of the basket at the end of 2022 was $ 4200 and at the end of 2023 was $ 4900.Assuming 2022 as the base year . Find the inflation rate for 2023.	2
	(b)	Kiran earned Rs. 25,000 in 2020. How much would that be worth in 2023 dollars? Assuming the CPI was 150 in 2020 and 240 in 2023.	2
	(c)	The New York Times cost $0.15 in 1970 and $2.00 in 2009.The average wage in manufacturing was $3.23 per hour in 1970 and $20.42 in 2009.By what percentage did the price of the newspaper and wage rise?	2
3.		The following information given related to a hypothetical economy.	

Year	Quantity (Pen)	Price (Pen)
2015	500	$ 10
2016	525	$ 11
2017	530	$ 15

	(a)	Compute NGDP, RGDP & GDP Deflator in each of the year assuming 2015 as the base year.	2
	(b)	What is the inflation rate in 2016 & 2017?	2
	(c)	Ria spends Rs. 500/- in buying a star buck cup of coffee. Ria's sister Sia works in a shop for Rs. 200 per hour. Draw a circular flow diagram to demonstrate the flow of goods & services & the flow of rupees for these activities.	2
4.	(a)	In 2020, the imaginary nation, Bluecenia had a population of 10,000 and a real GDP of $20,00,000. Bluecenia had a 10% growth in real GDP and a 12% growth in population size from 2020 to 2021. Compute the economic growth rate of Bluecenia from 2020 to 2021.	2
	(b)	Country A has a population of 1000, of whom 700 are workers, and has a real GDP of $2450. Country B has a population of 700, of whom 600 are workers and has a real GDP of $1800. From this hypothetical example, can we infer that a country with a higher standard of living enjoys a higher productivity? Justify your answer.	2
	(c)	Some facts that at first might seem confusing: The share of GDP devoted to investment was similar for the United States and South Korea during 1960-1990. During this period South Korea experienced around a 6 percent growth rate, while the United States had only a 2 percent growth rate. Why were the growth rates so different despite the investment rates being the same for both countries? Analyse.	2
5.	(a)	Economists in the US, a closed economy, have collected the following information for a particular year: Y = $10,000 C = $6,000; T =$1,500; G =$1,700, where Y, C, T, and G indicate GDP, Consumption expenditure by household, Tax revenue,	2

		and Govt. purchase respectively.	
		The economists also estimate that the investment (I) function is: I = 3300 - 100r, where 'r' indicates the real interest rate expressed as a percentage. Calculate the equilibrium real interest rate and amount of investment.	
	(b)	The following information is given relating to a hypothetical economy. GDP = $8 trillion, tax revenue = $1.5 trillion, private saving = $0.5 trillion, and public saving = $0.2 trillion. Assuming this economy is closed; calculate consumption, government purchases, national savings, and investment.	2
	(c)	Assume the US government reduced the tax size on interest income. By using the demand and supply model of the loanable funds market, graphically analyze its effect on national saving and investment.	2
6.	(a)	A person deposits a sum of Rs. 30,000 in SBI at the interest rate of 15% compounded annually for 10 years. Find the maturity value after 10 years.	2
	(b)	Suppose that an investor wishes to deposit an amount now so that in 30 years Rs. 1,000,000 will be in an account that pays 10% interest per year, compounded annually. What amount must be deposited now?	2
	(c)	Suppose that Rs. 1,000 is invested for six years at an interest rate of 10% per year, compounded annually..How much will be in the account at the end of six years?	2
7.	(a)	In the city of Pretoria, the Bureau of Labor Statistics has released tabulated data on the adult populations in December 2020.	2

No. of Males & Females	Not in Labor Force (in thousands)	Unemployed (in thousands)	Employed (in thousands)
Males	38	7	90
Females	35	6	90

		Estimates the total adult population and the total labor force in Pretoria.	
	(b)	From the above Table, calculate the unemployment rate and labor-force participation rate in Pretoria.	2
	(c)	"Frictional Unemployment is inevitable". Analyze.	2
8.	(a)	If the reserve ratio is 25% and the Central bank increases the quantity of reserve in the banking system by Rs. 120, find out by how much the money supply increases.	2

	(b)	If Federal Reserves in USA increases discount rate from 2% to 4%, then analyze its impact on the money supply of USA.	2
	(c)	If the reserve ratio is 5% and money deposited with the bank is Rs.1000. Calculate the money multiplier and supply of money in the economy?	2
9.	(a)	The following details are given relating to a hypothetical economy for the year 2023. GDP = $35000, inflow of income from abroad = $10000, Outflow of income to abroad = $7000, Depreciation = $4000. Calculate NDP and NNP.	2
	(b)	Claudia purchased a new motor car in 2020, paying $90000 from New York, which was produced in San Francisco, USA. She sold the same car in 2022 to John at $41,000. Analyze how these financial transactions affect the GDP of the USA in 2020 and 2022.	2
	(c)	In a hypothetical economy, the government spends $30,000 on an old-age pension for the social security of the elderly people. Analyze its effect on the GDP of that economy.	2
10	(a)	The following details given relating to a hypothetical economy for the year 2021. Total adult population = 10,000, labour force participation rate = 90%. Unemployment rate = 10%. Compute number of persons unemployed.	2
	(b)	Calculate the unemployment rate of a country Y from the given data. Total Population = 80,000, Labour Force = 30,000 & No of Employed People = 20,000.	2
	(c)	The Bureau of Labor Statistics announced that in January 2013, of all adult Americans, 143,322,000 were employed, 12,332,000 were unemployed, and 89,008,000 were not in the labor force. Use this information to calculate: a. The adult population b. The labor force c. The labor-force participation rate d. The unemployment rate	2

End of Questions