**XH-C1: Economics (60 marks)**

**Q1. to Q14. are MCQ where only one answer is correct. Each question carries one mark.**

Q1.   100 kg of food grains is to be divided among two individuals: Asha and Usha. Which of the following allocations is Pareto efficient?

      (A)    Asha receives 49 kg, and Usha receives 49 kg

      (B)    Asha receives 0 kg, and Usha receives 99 kg

      (C)    Asha receives 29 kg, and Usha receives 71 kg

      (D)    Asha receives 90 kg, and Usha receives 9 kg

Q2.   In the neoclassical growth model, an increase in the marginal propensity to save

      (A)    increases steady-state output per person.

      (B)    increases the steady-state growth rate of output.

      (C)    increases the steady-state capital per person.

      (D)    decreases aggregate demand in the economy.

Q3.   Primary Deficit is defined as:

      (A)    Total expenditure – (Revenue receipts + Recoveries of loan + Other capital receipts)

      (B)    Fiscal deficit – Interest payments

      (C)    Borrowings and other liabilities

      (D)    Non-plan expenditure – Total receipts

Q4.   If increase in money supply is accompanied also by increase in real income, then the

   (A)   rise in the general price level will be proportional to the rise in money supply.
   (B)   rate of change in price level will be equal to the difference between the rate of growth of money supply and the rate of growth of money demand.
   (C)   demand for money being a luxury good, price level will rise more than proportionately.
   (D)   price level will not change.

Q5.   Which one of the following is not the assumption of input-output analysis?

   (A)   There are no joint productions in the economy.
   (B)   Industries are governed by constant returns to scale.
   (C)   There is technological change.
   (D)   There are no shifts in the relative quantities of input used in specific industries.

Q6. If the relatively capital-abundant country X opens trade with relatively labour-abundant country Y and the trade takes place in accordance with the Heckscher-Ohlin model, then what would be the relative factor price in the two countries?

   (A)   Rise in X and Fall in Y
   (B)   Rise in both X and Y
   (C)   Fall in X and Rises in Y
   (D)   Fall in both X and Y

Q7.   Which of the following could not be offered to theoretically explain the Leontief Paradox?

   (A)   A relatively strong US demand for relatively labour intensive goods or a relatively strong foreign demand for relatively labour intensive goods.
   (B)   A relatively strong US demand for relatively labour intensive goods.
   (C)   Relatively high US tariffs on relatively labour intensive imports.
   (D)   US imports of goods that are relatively natural resource intensive in their production.

Q8.  Core inflation is a measure of inflation that

    (A)  is based on the prices of food, infrastructure and energy.

    (B)  includes items that face volatile price movements like food and energy.

    (C)  excludes items that face volatile price movements, notably food and energy.

    (D)  is calculated mainly for infrastructure industries.

Q9.  Which one of the following statements is correct if the public goods are provided by the market without any government interventions?

    (A)  Public goods and bads are under-provided

    (B)  Public goods are under-provided and public bads are over-provided

    (C)  Public goods are under-provided and public bads are produced at efficient point

    (D)  Public goods are over-provided and public bads are under-provided

Q10. Asymptotics refers to what happens when the

    (A)  sample size becomes very large.

    (B)  sample size becomes very small.

    (C)  number of explanatory variables becomes very large.

    (D)  number of explanatory variables becomes very small.

Q11. How would a decrease in the natural rate of unemployment affect the long run Phillips curve?

    (A)  There would be a downward movement along a given long-run Phillips curve.

    (B)  There would be an upward movement along a given long-run Phillips curve.

    (C)  It would shift the long-run Phillips curve right.

    (D)  It would shift the long-run Phillips curve left.

Q12. Which of the following will definitely cause the value of the *misery index* to increase?

      (A)   Stagflation of a greater magnitude.

      (B)   A leftward shift of the Phillips curve.

      (C)   An increase in the Repo rate and fall in labour productivity.

      (D)   An adverse exogenous shock like COVID-19.

Q13. The *kurtosis* of a normal distribution is the ratio of:

      (A)   Third central moment and the square of first central moment

      (B)   Fourth central moment and the square of second central moment

      (C)   Third central moment and the second central moment

      (D)   Second central moment and the square of third central moment

Q14. Adverse selection occurs

      (A)   when there is an adverse feeling between two real estate transacting parties.

      (B)   when a change in the behaviour of one party is exposed after the property deal is struck.

      (C)   prior to a business deal between a buyer and a seller.

      (D)   only in the case of perfect information.

**Q15. to Q24. are MCQ type, where only one answer is correct. Each question carries two marks.**

Q15. Including relevant lagged values of the dependent variable on the right hand side of a regression equation could lead to which one of the following?

   (A)   Biased but consistent coefficient estimate

   (B)   Biased and inconsistent coefficient estimate

   (C)   Unbiased but inconsistent coefficient estimate

   (D)   Unbiased and consistent but inefficient coefficient estimate

Q16. If the price elasticity of supply is 0.5, then it indicates

   (A)   a slower increase in the marginal cost of production compared to a market with a price elasticity of supply of 1.5.

   (B)   a 0.5% fall in the quantity supplied for a 1% increase in price.

   (C)   a more rapid increase in the marginal cost of production compared to a market with a price elasticity of supply of 1.5.

   (D)    a 1% increase in the quantity supplied for a 0.5% increase in price.

Q17. Theoretical Assertion (TA): The Harrod-Domar Model assumes a fixed technological relationship        between        capital        stock        and        income        flows. Reason (R): The model assumes flexible capital-output ratio.

   (A)   Both (TA) and (R) are true.

   (B)   Both (TA) and (R) are true, but (R) is not the correct explanation of (TA).

   (C)   Both (TA) and (R) are false.

   (D)   (TA) is true but (R) is false.

Q18. Suppose we run a bi-variate regression of $Y$ on $X$ and obtain the residuals as $e$. If we now regress $e$ on $X$, the slope estimate should be (if all properties of the OLS are met):

(A)   0

(B)   1

(C)   −1

(D)   Nothing can be said about this estimate

Q19. When the dollar strengthens, the reported consolidated earnings of U.S. based MNCs are _____affected by translation exposure. But when the U.S dollar weakens, the reported consolidated earnings are_____affected.

(A)   favourably; favourably affected but by a smaller degree

(B)   favourably; favourably affected by a higher degree

(C)   unfavourably;  favourably

(D)   favourably;  unfavourably

Q20. When external scale economies exist in an industry, new export opportunities will cause consumers in the exporting country to_____surplus and consumers in the importing country to_____surplus.

(A)   gain; gain

(B)   gain; lose

(C)   lose; lose

(D)   lose; gain

Q21. Suppose you are estimating a Cobb-Douglas production function using first-differenced data. How would you interpret the intercept term from this regression?

    (A)   The percentage increase in output per percentage increase in time.

    (B)   The average percentage increase in output each time period.

    (C)   The average percentage increase in output each time period above and beyond output increases due to capital and labour increments.

    (D)   There is no substantive interpretation because we are never interested in the intercept estimate from a regression.

Q22. If $X \sim B\,(n, p)$ then this distribution tends to a standard normal distribution when

    (A)   $p > (1 - p)$

    (B)   $n \to \infty$

    (C)   $n \to \infty;\ p \to 0$

    (D)   $n$ is finite

Q23. Suppose a country has a floating exchange rate and no capital controls. It also has a recessionary gap. It tackles this with an *expansionary fiscal policy*. In the final equilibrium people expect its exchange rate to stay at its new value. Which of the following statement(s) is/are **false**?

    (A)   There will be an initial increase in demand, probably of government purchases and consumer spending

    (B)   As demand increases, incomes and money demand start to increase, causing a rise in the interest rate and, in turn, in the exchange rate.

    (C)   The interest rate must end up at its initial value, so money demand must return to its original level.

    (D)   Output will end up higher than it was initially.

Q24. A friend has told you that his multiple regression has a high $R^2$ but all the estimates of the regression slopes are insignificantly different from zero on the basis of the '$t$- test'. This has probably happened because the

    (A)   intercept has been omitted.

    (B)   explanatory variables are highly collinear.

    (C)   explanatory variables are highly orthogonal.

    (D)   dependent variable does not vary by much.

**Q25. to Q28. are MSQ type, where one or more answers are correct. Each question carries two marks.**

Q25. Which of the following statement(s) about $y = Ak$ type growth models is/are **false**?

    (A)   They assume that the production function shifts upwards whenever the stock of physical capital increases.

    (B)   They suggest that if the level of investment is smaller than depreciation, then there could be sustained growth.

    (C)   These are called endogenous growth theories.

    (D)   They argue that increasing the saving ratio will have only a temporary effect on output per worker.

Q26. Consider the following 3-player extensive form game with perfect information given by the game tree.
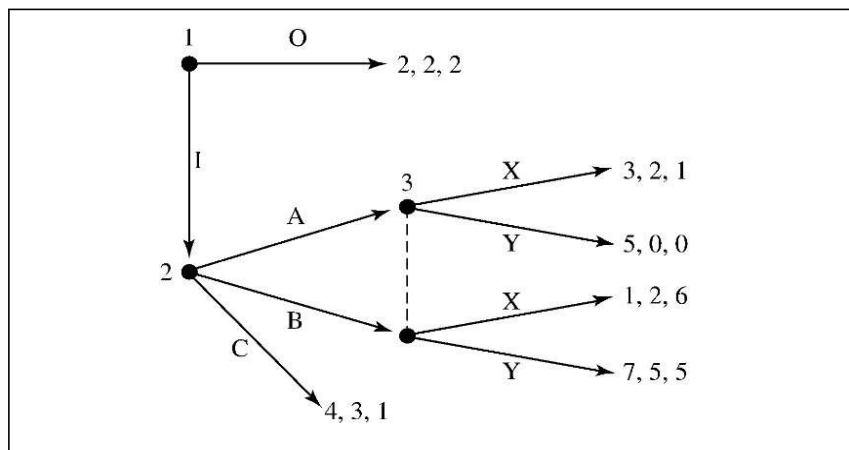


Determine the subgame perfect equilibrium for this game.

    (A)   (I, C, Y)

    (B)   (I, C)

    (C)   (I, C, X)

    (D)   (I, B, Y)

Q27. Consider the two lists and identify the correct matching option from the given choices

.

| List I | List II |
|---|---|
| 1. Big Push Theory | (i) Joan Robinson |
| 2. 'Knife-Edge' Problem | (ii) Paul Rosenstein-Rodan |
| 3. Golden Age | (iii) Edmund Phelps |
| 4. Golden Rule of Accumulation | (iv) Roy Harrod |

(A)   [1, (i)], [2, (ii)], [3, (iii)], [4, (iv)]

(B)   [1, (iv)], [2, (iii)], [3, (ii)], [4, (i)]

(C)   [1, (ii)], [2, (iv)], [3, (i)], [4, (iii)]

(D)   [1, (iii)], [2, (iv)], [3, (i)], [4, (ii)]

Q28.  To test $H_0 : \mu = \mu_0$, against  H1  :  $\mu \neq \mu_0$ in case of  $N (\mu, \sigma^2)$ where $\sigma^2$ is unknown, $H_0$ is rejected if:

(A)   $\left| \bar{x} - \mu_0 \right| > \dfrac{\sigma}{\sqrt{n}} z_{\alpha/2}$

(B)   $\left| \bar{x} - \mu_0 \right| \leq \dfrac{\sigma}{\sqrt{n}} z_{\alpha/2}$

(C)   $\left| \bar{x} - \mu_0 \right| > \dfrac{s}{\sqrt{n}} t_{\alpha/2}$

(D)   $\left| \bar{x} - \mu_0 \right| \leq \dfrac{s}{\sqrt{n}} t_{\alpha/2}$

**Q29. to Q34. are <u>NAT</u>. Each question carries one mark.**

Q29. Given the per-capita income distribution: ₹ 18000, 21000, 29000, 31000; 18000, 23000, 27000, 27500, 35000, 22500 and poverty line ₹ 25000, the Poverty Gap Ratio is = _____ *(answer in two decimal places)*.

Q30. Demand function for a monopolist is $P = 28 - 5Q$ (where P is price and Q is quantity). Total cost $(C) = Q^2 + 4Q$. The value of maximum profit will be = _____*(in integer)*.

Q31. For a binomial distribution $P(X = r) = {}^{10}C_r \, (0.5)^r (0.5)^{10-r}$ where $r = 0,1,2,\ldots,10,$ the standard deviation of this distribution will be = _____*(answer in two decimal places)*.

Q32. Suppose U = *min.* (X,Y) and the price of X is ₹1 and the price of Y is 1 and income is ₹12. If the price of X increases to ₹2, the substitution effect is = _____ *(in integer)*.

Q33. Following are the data for the Indian Economy.

| Year | GDP at current market prices | GDP at constant base year (2011-12) prices |
|---|---|---|
| | (₹ crore) | |
| 2010-11 | 7634472 | 8301235 |
| 2011-12 | 8736329 | 8736329 |
| 2012-13 | 9944013 | 9213017 |
| 2013-14 | 11233522 | 9801370 |
| 2014-15 | 12467959 | 10527674 |
| 2015-16 | 13771874 | 11369493 |
| 2016-17 | 15391669 | 12308193 |
| 2017-18 | 17098304 | 13175160 |
| 2018-19 | 18971237 | 13981426 |

Data Source: Handbook of Statistics for the Indian Economy, RBI.

Based on the above data, the growth rate (in percentage) for the year 2018-19 is = _____

*(answer in two decimal places)*.

Q34. The following Table provides data for the Indian Economy

| Year | GDP at current market prices | GDP at constant base year prices | Gross Savings at current prices | Gross Capital Formation at current prices |
|---|---|---|---|---|
| | (₹ crore) | | | |
| 2010-11 | 7634472 | 8301235 | 2817807 | 3037520 |
| 2011-12 | 8736329 | 8736329 | 3026837 | 3403008 |
| 2012-13 | 9944013 | 9213017 | 3369202 | 3847122 |
| 2013-14 | 11233522 | 9801370 | 3608193 | 3794135 |
| 2014-15 | 12467959 | 10527674 | 4019957 | 4179779 |
| 2015-16 | 13771874 | 11369493 | 4282259 | 4422659 |
| 2016-17 | 15391669 | 12308193 | 4825113 | 4918077 |
| 2017-18 | 17098304 | 13175160 | 5538393 | 5849224 |
| 2018-19 | 18971237 | 13981426 | 5712920 | 6108582 |

Data Source: Handbook of Statistics for the Indian Economy, RBI. The average investment ratio (in percentage) for the period 2010-11 to 2018-19 is = _____ (answer in one decimal place).

**Q35. to Q40. are <u>NAT</u>. Each question carries two marks.**

Q35. Consider an island economy where the BoP in a particular year is characterized by the following in million US Dollars.

| Current Account Balance = – 400 | Capital Exports = 700 | Net Invisible Receipts = 100 |
|---|---|---|
| Change in Reserves = –100 | Imports = 800 | Capital Inflow = 450 |

The value of exports (in million US Dollars) from this economy will be = _____ *(in integer).*

Q36. Consider a closed economy operating at less than full employment level in which the government has a balanced budget. The marginal propensity to consume is 0.8 and the GDP falls short of full employment output by 5000. In this situation, the minimum required increase in government spending that could bring about full employment in this economy is = _ *(in integer).*

Q37. Mr. Rao starts his own Fancy shop after quitting his ₹150,000 job as manager at a shop in a mall. His revenues for the first year are ₹500,000. He paid ₹90,000 in rent for the shop space, ₹60,000 for a sales person's salary, ₹24,000 for a cleaner, ₹150,000 for purchase of materials, and ₹6,000 on other miscellaneous costs. The normal profit from running his business is ₹20,000. The economic profit of Mr. Rao will be = _ *(in integer).*

Q38. The two regression lines of a bi-variate model are as follows:
$8x - 10y + 66 = 0$  (Regression line of $y$ on $x$)
$40x - 18y = 214$  (Regression line of $x$ on $y$)

The variance of $x$ is 9. The standard deviation of $y$ will be = _____ *(in integer).*

Q39. Given the following data:

Health index = 0.805; Expected years of schooling index = 0.622 Mean years of schooling index = 0.404; Education index = 0.513 Income index = 0.559

The value of Human Development Index (HDI) will be =_(answer in three decimal places).

Q40. Study the Table given below and answer the following question.

| INDICES OF REAL EFFECTIVE EXCHANGE RATE (REER) AND NOMINAL EFFECTIVE EXCHANGE RATE (NEER) OF THE INDIAN RUPEE (36- Currency Bilateral Weights), (Financial Year - Annual Average) | | |
|---|---|---|
| Year | Export-Based Weights | |
| | REER | NEER |
| (Base : 2004-05 = 100) | | |
| 2009-10 | 104.97 | 91.42 |
| 2010-11 | 115.02 | 94.74 |
| 2011-12 | 113.18 | 89.13 |
| 2012-13 | 108.71 | 80.05 |
| 2013-14 | 105.48 | 73.56 |
| 2014-15 | 111.25 | 75.21 |
| 2015-16 | 114.45 | 76.45 |
| 2016-17 | 116.45 | 76.38 |
| 2017-18 | 121.94 | 78.89 |
| 2018-19 | 116.32 | 74.18 |

Data Source: Handbook of Statistics for the Indian Economy, RBI.

Based on the above data, the extent of real appreciation of the Indian ₹ (in percentage) during 2013-14 to 2018-19 will be =_____(answer in two decimal places).

**END of Paper XH-C1**

**ANSWER KEY: XH-C1: Economics**

| Q. No. | Type | Section | Key | Marks |
|--------|------|---------|-----|-------|
| 1 | MCQ | XH-C1 | C | 1 |
| 2 | MCQ | XH-C1 | C | 1 |
| 3 | MCQ | XH-C1 | B | 1 |
| 4 | MCQ | XH-C1 | B | 1 |
| 5 | MCQ | XH-C1 | C | 1 |
| 6 | MCQ | XH-C1 | C | 1 |
| 7 | MCQ | XH-C1 | B | 1 |
| 8 | MCQ | XH-C1 | C | 1 |
| 9 | MCQ | XH-C1 | B | 1 |
| 10 | MCQ | XH-C1 | A | 1 |
| 11 | MCQ | XH-C1 | D | 1 |
| 12 | MCQ | XH-C1 | A | 1 |
| 13 | MCQ | XH-C1 | B | 1 |
| 14 | MCQ | XH-C1 | C | 1 |
| 15 | MCQ | XH-C1 | A | 2 |
| 16 | MCQ | XH-C1 | D | 2 |
| 17 | MCQ | XH-C1 | D | 2 |
| 18 | MCQ | XH-C1 | A | 2 |
| 19 | MCQ | XH-C1 | C | 2 |
| 20 | MCQ | XH-C1 | B | 2 |
| 21 | MCQ | XH-C1 | C | 2 |
| 22 | MCQ | XH-C1 | B | 2 |
| 23 | MCQ | XH-C1 | D | 2 |
| 24 | MCQ | XH-C1 | B | 2 |
| 25 | MSQ | XH-C1 | B, D | 2 |
| 26 | MSQ | XH-C1 | C | 2 |
| 27 | MSQ | XH-C1 | C | 2 |
| 28 | MSQ | XH-C1 | A | 2 |
| 29 | NAT | XH-C1 | 0.08 to 0.10 | 1 |
| 30 | NAT | XH-C1 | 24 to 24 | 1 |
| 31 | NAT | XH-C1 | 1.56 to 1.60 | 1 |
| 32 | NAT | XH-C1 | 0 to 0 | 1 |
| 33 | NAT | XH-C1 | 6.10 to 6.14 | 1 |
| 34 | NAT | XH-C1 | 34.1 to 34.5 | 1 |
| 35 | NAT | XH-C1 | 300 to 300 | 2 |
| 36 | NAT | XH-C1 | 1000 to 1000 | 2 |
| 37 | NAT | XH-C1 | 0 to 0 | 2 |
| 38 | NAT | XH-C1 | 4 to 4 | 2 |
| 39 | NAT | XH-C1 | 0.610 to 0.618 | 2 |
| 40 | NAT | XH-C1 | 10.26 to 10.30 | 2 |