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BUSINESS MATHEMATICS HSSC-I

SECTION – A (Marks 10)

Time allowed: 15 Minutes

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Note: Section – A is compulsory. All parts of this section are to be answered on the separately provided OMR Answer Sheet which should be completed in the first 15 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.

Q. 1 Choose the correct answer A / B / C / D by filling the relevant bubble for each question on the OMR Answer Sheet according to the instructions given there. Each part carries one mark.

- 1) If $2:7::x:49$, then value of x is:
A. 4
B. 14
C. 52
D. 28
- 2) Amount is equal to:
A. Principal + Interest
B. Principal – Interest
C. Principal \times Interest
D. Principal \div Interest
- 3) If payments starts on a certain date and continues for an indefinite period, then it is called:
A. Ordinary Annuity
B. Annuity Due
C. Perpetuity
D. Contingent Annuity
- 4) The root of $x^2 + 2x + 1 = 0$ is:
A. -1
B. 2
C. -2
D. 1
- 5) The roots of $ax^2 + bx + c = 0$, $a \neq 0$ are real and unequal if:
A. $b^2 = 4ac$
B. $b^2 > 4ac$
C. $b^2 < 4ac$
D. $b^2 + 4ac = 0$
- 6) If $f(x) = \frac{x}{x+2}$, $x \neq -2$ then $f(-1) =$:
A. 0
B. 1
C. -1
D. $\frac{1}{2}$
- 7) The value of determinant of every identity matrix is always:
A. 0
B. 1
C. 2
D. 3
- 8) $(10110)_2$ in decimal number system is:
A. 20
B. 22
C. 24
D. 26
- 9) If $\frac{2x}{7} + 1 = 0$, then value of x is:
A. $-\frac{2}{7}$
B. $\frac{2}{7}$
C. $\frac{7}{2}$
D. $-\frac{7}{2}$
- 10) Commission on Rs. 3500 was Rs. 175, the rate of commission is:
A. 5%
B. 3%
C. 4%
D. 20%

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BUSINESS MATHEMATICS HSSC-I

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Time allowed: 2:15 Hours

Total Marks Sections B and C: 40

NOTE: Attempt any eight parts from Section 'B' and any two questions from Section 'C' on the separately provided answer book. Use supplementary answer sheet i.e. Sheet-B if required. Write your answers neatly and legibly.

SECTION - B (Marks 24)

Q. 2 Attempt any EIGHT parts. All parts carry equal marks.

(8 x 3 = 24)

- (i) Three men invested Rs. 18000/-, Rs. 12000/- and Rs. 6000/- respectively. How should they share the profit of Rs. 3600/-?
- (ii) An accidented motor car of cost Rs. 29500/- is sold at a loss of 43.5%. Find the loss and the selling price.
- (iii) Out of 80,000 seats in a cricket stadium, 12% seats were occupied by VIP's and 39040 seats by general public. How many seats are un-occupied?
- (iv) How long will it take for Rs. 4000/- to become Rs. 4800/- at 10% simple interest?
- (v) Find the solution set of $x = y$ and $2x + y = 3$.
- (vi) Find the break even point for the following cost and revenue functions: $C(x) = 10x + 600$ and $R(x) = 30x$
- (vii) Find the multiplicative inverse (A^{-1}) of the matrix $A = \begin{bmatrix} -1 & 7 \\ 8 & -16 \end{bmatrix}$
- (viii) Abbas purchased some goods for Rs. 7500/-. He was allowed a trade discount of 7%. Find the amount of discount.
- (ix) Find the difference of $(1100)_2 - (111)_2$.
- (x) Find the value by changing into decimal number system. $(945)_{10} + (1111)_2$.
- (xi) Solve for x, y and z if:
$$\begin{bmatrix} x & y \\ y & z \end{bmatrix} + \begin{bmatrix} 2x & -y \\ 3y & -4z \end{bmatrix} = \begin{bmatrix} 6 & 0 \\ 8 & 9 \end{bmatrix}$$

SECTION - C (Marks 16)

Note: Attempt any TWO questions. All questions carry equal marks.

(2x 8 = 16)

- Q. 3**
 - a. A salesman is paid a salary of Rs. 500/- per month and 1% commission on sales. If his total income in one month is Rs. 750/-, find the value of his sales in that month. (04)
 - b. A bank lends Rs. 1250000/- for two years. On $\frac{3}{4}$ of the amount bank charged 4% interest, on the balance bank charged 5% interest. What is the amount of total simple interest? (04)
- Q. 4**
 - a. How much amount deposited now that will pay Rs. 4000/- at the end of each half year for 15 years if interest is 12% compounded six monthly? (04)
 - b. Solve the following equations by using Cramer's rule $4x - y = 13$ and $3x - 2y = 6$ (04)
- Q. 5**
 - a. Suppose $C(x) = 15x + 3000$ and $R(x) = 30x$. Find the profit function. Also find the profit of 500 units. (04)
 - b. Evaluate by changing into decimal number system. $(1111000)_2 + (11100111)_2 - (39)_{10}$ (04)

THE HISTORY OF THE UNITED STATES

The history of the United States is a story of growth and expansion. From a small collection of colonies on the eastern seaboard, the nation grew to encompass a vast continent. This growth was driven by a desire for land, resources, and a better life. The westward expansion was a defining characteristic of the early American experience.

