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Roll No. | | | | | | |

Answer Sheet No._____

Sig. of Candidate._____

Sig. of Invigilator._____

BUSINESS MATHEMATICS HSSC–I

SECTION – A (Marks 10)

Time allowed: 15 Minutes

NOTE: Section–A is compulsory. All parts of this section are to be answered on the question paper itself. It 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 Circle the correct option i.e. A / B / C / D. Each part carries one mark.

(i) Zinc and copper are mixed into ratio of 2:3 to make a brass. What is the amount of each metal in 144 lb of brass?

A. 54:90 B. 43:100.3

C. 57.6 : 86.4 D. 50:100

(ii) Mr. Ali gets 20% profit from his investment. His profit is Rs. 5080. What is his amount of investment?

A. 25300 B. 25400

C. 2500 D. 25100

(iii) The formula for percentage of a number =?

A. price / rate x 100 B. price x rate%

C. sale x rate% D. base x rate%

(iv) The money borrowed or invested is called:

A. Amount B. Principal

C. Return D. Interest

(v) If the payments are made at the end of each payment interval, the annuity is called:

A. Simple annuity B. Annuity due

C. Perpetuity D. Ordinary annuity

(vi) The graph of a linear function represents:

A. Parabola B. Straight line C. Circle D. Triangle

(vii) The roots of quadratic equation are equal if:

A. $b^2 = ac$ B. $b^2 - 4ac > 0$ C. $b^2 - 4ac < 0$ D. $b^2 - 4ac = 0$

(viii) $(1011)_2 - (1010)_2 = ?$

A. $(0001)_2$ B. $(0011)_2$ C. $(0111)_2$ D. $(1111)_2$

(ix) A square matrix A is said to be Symmetric if:

A. $A^t = -A$ B. $A^t = A$ C. $A^t \neq A$ D. $A^t < A$

(x) The solution set of two equations, $x + y = 12$, $x - y = -2$ is:

A. $(2,10)$ B. $(6,6)$ C. $(5,7)$ D. $(9,3)$

For Examiner's use only:

Total Marks: 10

Marks Obtained:

BUSINESS MATHEMATICS HSSC–I

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) The length of a Pakistani flag is 1.6 meters. The ratio between green and white parts is 3:1. Find the length of green part.

(ii) A car runs 150 kilometres in 10 litters of petrol. How much petrol would be used to travel 280 km.

(iii) A shop keeper bought a bag of rice for Rs. 400 and sold it for Rs. 480. Find the profit percent.

(iv) A TV set costing Rs. 12000 was purchased for Rs. 11160. Find out the rate of discount.

(v) A commission agent sold goods for Rs. 60,000. Find out his commission if he received 5% commission.

(vi) The population size Y of a certain city at time t is given by $Y = f(t) = 4t^2 + 2t$. Find $f(1), f(2)$ and $f(3)$.

(vii) Solve the equation for the value of x : $\frac{5}{x-2} - \frac{4}{x} = \frac{1}{x+6}$.

(viii) At what rate would a sum of money double itself in 20 years with simple interest?

(ix) Solve the following system of equations for x and y : $3x-4(y-2)=2$ and $2x+3(y-3)=4$.

(x) If $A = \begin{bmatrix} 2 & 6 & 1 \\ 6 & 8 & 5 \\ 4 & 7 & 9 \end{bmatrix}$ find $\frac{3}{2}A$

(xi) Convert $(1111.111)_2$ into decimal number system.

SECTION – C (Marks 16)

Note: **Attempt any TWO questions. All questions carry equal marks.** **(2x 8 = 16)**

Q. 3 **a.** If 6 pumps raise 108 litters of water in 12 minutes. How long will 4 pumps take to raise 96 litters of water? **(04)**

b. On a cut price shop, the price of a pair of shoes is Rs. 400 which is 20% less of the actual price. What is the original price? **(04)**

Q. 4 **a.** Find the two dimensions of a rectangular field which has an area of $108\ m^2$ and perimeter of 42 meters. **(04)**

b. If $A = \begin{bmatrix} -2 & 6 \\ 4 & 7 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 3 \\ 0 & 1 \end{bmatrix}$ find (i) $2A-3B$. (ii) $(AB)^t = B^t A^t$ **(04)**

Q. 5 **a.** In how many years a sum of Rs. 5560 would amount Rs. 7000 at 8% interest compounded semi-annually? **(04)**

b. Find the accumulated value of Rs. 5000 invested at the end of each quarter for 5 years at 8% compounded quarterly. **(04)**