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BUSINESS MATHEMATICS HSSC–I

SECTION – A (Marks 10)

Time allowed: 15 Minutes | **Version Number** | **1** | **8** | **5** | **5** |

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) Find x if $\frac{20}{7}=\frac{80}{x}$

A. 22 B. 24
C. 26 D. 28

2) A salesman walks $3.5km$ in one hour. By same speed, in 2.5 hours he walks:

A. $8\frac{3}{4}km$ B. $10\frac{1}{2}km$
C. $5\frac{1}{4}km$ D. $6\frac{3}{4}km$

3) If 2% of a number is 400. What is the number?

A. 18000 B. 20000
C. 22000 D. 24000

4) The simple interest of loan Rs.3000 for 2 years at 7% is:

A. Rs.400 B. Rs.420
C. Rs.500 D. Rs.550

5) If the payments start on certain date and continue for indefinite period, then it is called:

A. Simple annuity B. Annuity due
C. Perpetuity D. Ordinary annuity

6) Let $f(x)=5x^2-2x+6$, then what is the value of $f(2)$?

A. 20 B. 22
C. 24 D. 26

7) A square matrix A is said to be singular if:

A. $|A|\neq 0$ B. $|A|=0$
C. $|A|<0$ D. $|A|>0$

8) $(1010.10)_2$ in decimal system is:

A. 10.2 B. 10.5
C. 11.5 D. 12

9) If A is a matrix of order $m\times p$ is multiplied by another matrix B of order $p\times n$, then the order of product AB is:

A. $m\times p$ B. $m\times n$
C. $p\times n$ D. $n\times p$

10) Discriminant of equation $x^2+6x-5=0$ is:

A. 16 B. 40
C. 50 D. 56

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) A T-shirt marked at Rs.145 was sold for Rs.100 in the clearance sale. Find the rate of discount.

(ii) A man spends 97% of his income and saves Rs.600. What is his income?

(iii) Find three consecutive even integers whose sum is 66.

(iv) A motorcycle worth Rs.29500 was sold at a loss of 40% after an accident. Find the loss and selling price.

(v) A property dealer sells a property of worth Rs.1900000 at 2% commission. How much does he receive?

(vi) Differentiate between even and odd functions?

(vii) Write down three applications of annuity in business?

(viii) At what rate Rs.100,000 doubles itself in 5 years with simple interest.

(ix) Solve for x: $x^2+7x+12=0$

(x) IF $A=\begin{bmatrix}4 & -7\\ 8 & 11\end{bmatrix}$ Find A^{-1} and show that $AA^{-1}=1$.

(xi) Simplify: $\{(100111)_2+(10101)_2\}-(10111)_2$

SECTION – C (Marks 16)

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

Q. 3 **a.** A famous shoe company has 50,000 pairs of shoes and management of the company wants to supply these pairs of shoes to four wholesale dealers in the ratio of $4:7:9:5$. How many pairs of shoes will each dealer receive? **(04)**

b. A manager plans to produce 100 units with the help of 25 persons working 4 hours daily. How many units can be made by 40 persons if they work 3 hours daily? **(04)**

Q. 4 **a.** Solve the system of equations by matrices. $\begin{matrix}2x+5y=30\\ 3x-2y=7\end{matrix}$ **(04)**

b. Find the values of x if : $\frac{x+2}{x-3}+\frac{x-3}{x+2}=\frac{5}{2}$ **(04)**

Q. 5 **a.** At what rate of interest compounded quarterly for $2\frac{1}{2}$ years will Rs.2500 amount to Rs.3900. **(04)**

b. Find the future value of an annuity if Rs.1500 deposited at the beginning of each month for 3 years at the rate of 12% compounded monthly. **(04)**