



Association of Accounting Technicians of Sri Lanka

Level I Examination – July 2026

Question Paper and Suggested Answers

(1902) BUSINESS MATHEMATICS AND STATISTICS (BMS)

Association of Accounting Technicians of Sri Lanka

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A publication of the Education and Training Division

THE ASSOCIATION OF ACCOUNTING TECHNICIANS OF SRI LANKA
Level I Examination – July 2026
(1902) BUSINESS MATHEMATICS AND STATISTICS
SUGGESTED ANSWERS

(Total 40 Marks)

SECTION - A

Suggested Answers to Question One:

1.1 (1)

Unite 01.4.1

$$\begin{aligned}5y + 7 &= 23 + y \\4y &= 16 \\y &= 4 //\end{aligned}$$

(03 marks)

1.2 (2)

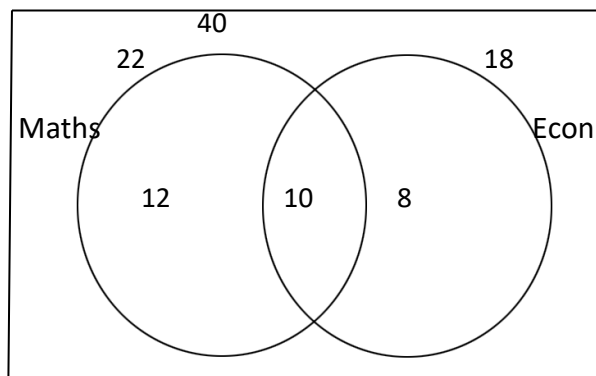
Unite 02.2

$$\begin{aligned}I &= Xrn \quad x = 45\,000, \quad n = 4, \quad r = 0.065 \\I &= 45\,000 \times 0.065 \times 4 \\I &= \text{Rs. } 11\,700 //\end{aligned}$$

(03 marks)

1.3 (2)

Unite 6.3



The number of students who like only Mathematics is 12

(03 marks)

1.4 (3)

Unite 03

$$TR = p \times q$$

$$TR = 1000q$$

$$TC = FC + VC$$

$$TC = 2,000,000 + 600q$$

At the BEP

$$TR = TC$$

$$1000q = 2,000,000 + 600q$$

$$1000q - 600q = 2,000,000$$

$$400q = 2,000,000$$

$$q = 5,000$$

break-even quantity = 5,000 units //

(03 marks)

1.5 (4)

Unite 4.8

$$\text{Coefficient of Skewness} = \frac{3(\text{Mean} - \text{Median})}{\text{Standard Deviation}}$$

$$\text{Coefficient of Skewness} = \frac{3(57.25 - 58.43)}{\sqrt{56.25}}$$

$$\text{Coefficient of Skewness} = -0.472$$

(03 marks)

1.6 (2)

Unite 05.5

$$r = \frac{n \sum xy - \sum x \cdot \sum y}{\sqrt{(n \sum x^2 - (\sum x)^2)(n \sum y^2 - (\sum y)^2)}}$$

$$r = \frac{12 \times 575.47 - 104.3 \times 66.1}{\sqrt{(12 \times 908.03 - 104.3^2)(12 \times 364.97 - 66.1^2)}}$$

$$\underline{\underline{r = 0.84}}$$

(03 marks)

1.7 (1)
Unite 07.6.

$$\begin{aligned}\text{Simple Aggregate Price Index} &= \frac{\sum p_1}{\sum p_0} \times 100 \\ &= \frac{7800}{7500} \times 100 \\ &= \mathbf{104 \% //}\end{aligned}$$

(03 marks)

1.8 (4)
Unite 02.2

$$\begin{aligned}S &= X(1 + r)^N & S = 1,000,000, n = 3, \quad r = 0.08, \quad 1 + r = 1.08 \\ S &= 1,000,000 \times 1.08^3\end{aligned}$$

$$X = \text{Rs. } 1,259,712 //$$

(03 marks)

1.9 (3)
Unite 4.6

$$\begin{aligned}L_1 &= \mathbf{29.5}, & \Delta_1 &= 22 - 17 = 5 & C &= 10 \\ & & \Delta_2 &= 22 - 12 = 10\end{aligned}$$

$$M_o = L_i + \left[\frac{\Delta_1}{\Delta_1 + \Delta_2} \right] \times C$$

$$M_o = 29.5 + \left[\frac{5}{5+10} \right] \times 10$$

$$M_o = \mathbf{32.83 //}$$

(03 marks)

1.10 (3)
Unite 1.3

$$\text{Weight of Oranges} = 600 \times 0.17 = 102 \text{ Kg. //}$$

(03 marks)

1.11 Unite 6/ 7.9

A	→	4
B	→	3
C	→	1
D	→	2

(01 mark each, 04 marks)

1.12 Unite 8

- Regression analysis
- Time Series analysis
- Hypothesis Testing
- Descriptive statistics
- Inferential statistics

(02 marks)

1.13 Unite 8

- Data Collection
- Data Analysis
- Interpretation
- Implementation
- Define Business Objectives
- Establish Data Governance & Infrastructure
- Identify and collect relevant data
- Clean and organize the data
- Analyze and Visualize Findings
- Execute Decision and Monitor impact

(02 marks)

1.14 Unite 7.9

True

(01 mark)

1.15 Unite 5,3

False

(01 mark)

(Total 40 marks)

End of Section A

Suggested Answers to Question Two:**Chapter - 01.3 / 01.4****(a)****(i)**

Total no of fours – X

Total no of sixse – Y

$$x + y = 55 \quad \text{—————} \textcircled{1}$$

$$4x + 6y = 270 \quad \text{—————} \textcircled{2}$$

$$\textcircled{1} \times 4 = 4x + 4y = 220 \quad \text{—————} \textcircled{3}$$

$$\textcircled{2} - \textcircled{3} \quad 2y = 50$$

$$y = 25$$

When $y = 25$

$$x = 55 - 25$$

$$x = 30$$

iithe total number of runs scored from sixes = $25 \times 6 = 150 //$ **(04 marks)****(02 marks)****(b)****i**

$$2x + 2y \leq 6 \quad \text{—————} \textcircled{1}$$

If $x = 0$

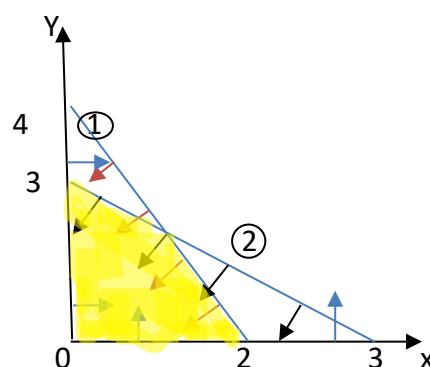
$$2y = 6$$

$$y = 3$$

If $y = 0$

$$2x = 6$$

$$x = 3$$



$$2x + y \leq 4 \quad \text{—————} \textcircled{2}$$

If $x = 0$

$$y = 4$$

If $y = 0$

$$2x = 4$$

$$x = 2$$

$$(0,4), (2,0)$$

(03 marks)

(ii)

Highlights in the graph.

(01 marks)

(Total 10 marks)

Suggested Answers to Question Three:

Chapter - 3.2 /3.3/ 3.6.1/ 3.9 /07.6.3

(a)

(i)

$$TC = FC + VC$$

$$TC = 10\,000 + q^2 - 40q \quad //$$

$$TC = q^2 - 40q + 10\,000 \quad //$$

$$TR = p \times q$$

$$p = 400 - q$$

$$TR = (400 - q) \times q$$

$$TR = 400q - q^2 \quad //$$

(04 marks)

(ii)

$$TC = q^2 - 40q + 10\,000$$

$$\frac{dTC}{dq} = MC = 2q - 40 = 0$$

$$2q - 40 = 0$$

$$q = 20$$

The cost-minimizing production level is 20 units.

(02 marks)

(b)

P ₀	q ₀	P ₁	P ₀ q ₀	P ₁ q ₀
100	10	200	1,000	2,000
60	12	110	720	1,320
60	6	120	360	720
150	4	320	600	1,280
			2,680	5,320

$$\begin{aligned}\text{Laspeyre's Price Index} &= \frac{\sum p_1 q_0}{\sum p_0 q_0} \times 100 \\ &= \frac{5,320}{2,680} \times 100 \\ &= \mathbf{198.51 \% //}\end{aligned}$$

Alternative Answer

Consumer goods	P ₁ Q ₀	P ₀ Q ₀
Fresh Milk	2,000	1,000
Bread	1,320	720
Eggs	720	360
Dhal	1,280	600
	5,320	2,680

$$= 5,320 / 2,680 \times 100 = \mathbf{198\%}$$

(04 marks)
(Total 10 marks)

Suggested Answers to Question Four:

Chapter - 04.6 / 04.7/4.5.2

(a)

Interval	Mid Point (x)	f	Cumulative Frequency (Cf)
0 - 9	4.5	4	4
10 - 19	14.5	16	20
20 - 29	24.5	15	35
30 - 39	34.5	13	48
40 - 49	44.5	2	50
		50	

(i) Median (Md)

$$\frac{n}{2} = 25, \text{ Median Class } 19.5 - 29.5(20 - 29)$$

$$L_1 = 19.5 \quad n = 50 \quad F_c = 20 \quad f_m = 15 \quad C = 29.5 - 19.5 = 10$$

$$Md = L + \frac{\left(\frac{n}{2} - F_c\right)}{f_m} \times c$$

$$Md = 19.5 + \frac{(25-20)}{15} \times 10$$

$$\underline{\underline{Md = 22.83}}$$

(03 marks)

(ii)

The values of $\sum fX$, $\sum fX^2$ and $\sum f$ can be obtained by using a table or calculator.

Waiting Time in Minutes	Frequency	Mid-Point	$F(x)$	Fx^2
0-9	4	4.5	18	81
10-19	16	14.5	232	3,364
20-29	15	24.5	367.50	9,003.75
30-39	13	34.5	448.50	15,473.25
40-49	2	44.5	89	3,960
			$\sum fx = 1,155$	$\sum fx^2 = 31,882.50$

$$\sum fX = 1155 \quad \sum fX^2 = 31,882.5 \quad \sum f = 50$$

$$\text{Mean} = \frac{\sum fx}{\sum f}$$

$$= \frac{1155}{50}$$

$$\text{Mean} = \underline{\underline{23.1}}$$

(03 marks)

(iii)

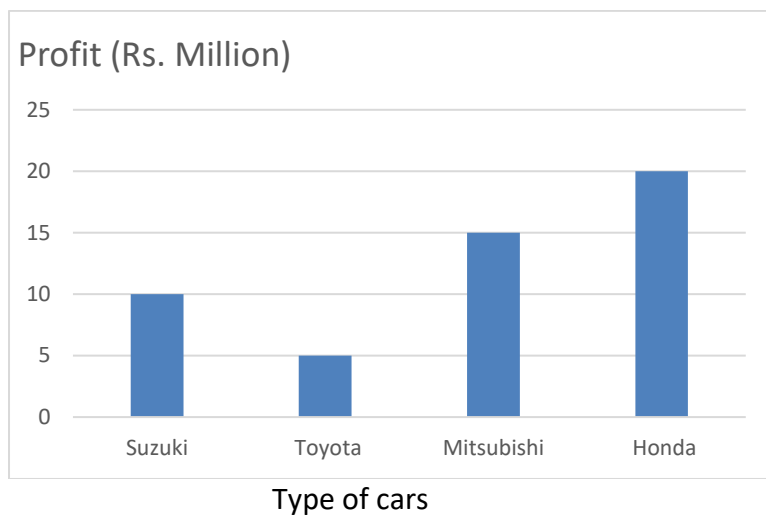
$$\text{Standard Deviation} = \sqrt{\frac{\sum fx^2}{\sum f} - \left[\frac{\sum fx}{\sum f}\right]^2}$$

$$\text{Standard Deviation} = \sqrt{\frac{31882.5}{50} - \left[\frac{1155}{50}\right]^2}$$

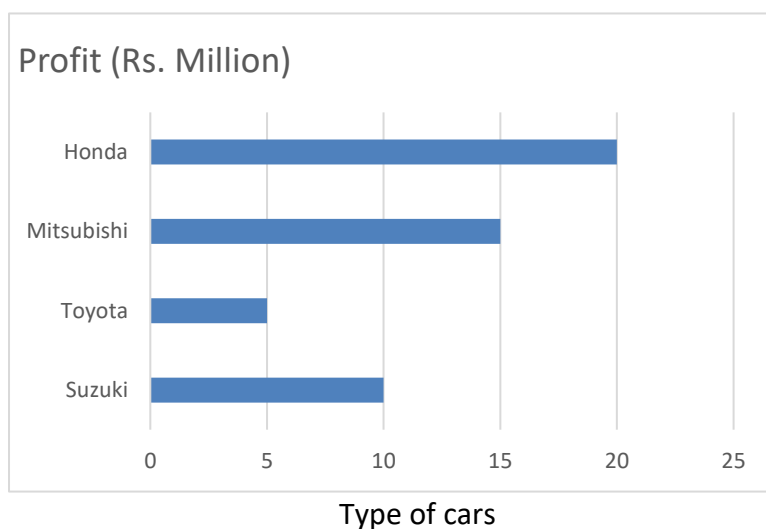
$$= 10.2 //$$

(07 marks)

(b)



OR



(03 marks)
(Total 10 marks)

Suggested Answers to Question Five:

Chapter - 6.3 / 6.6

(a)

the probability that a randomly selected student

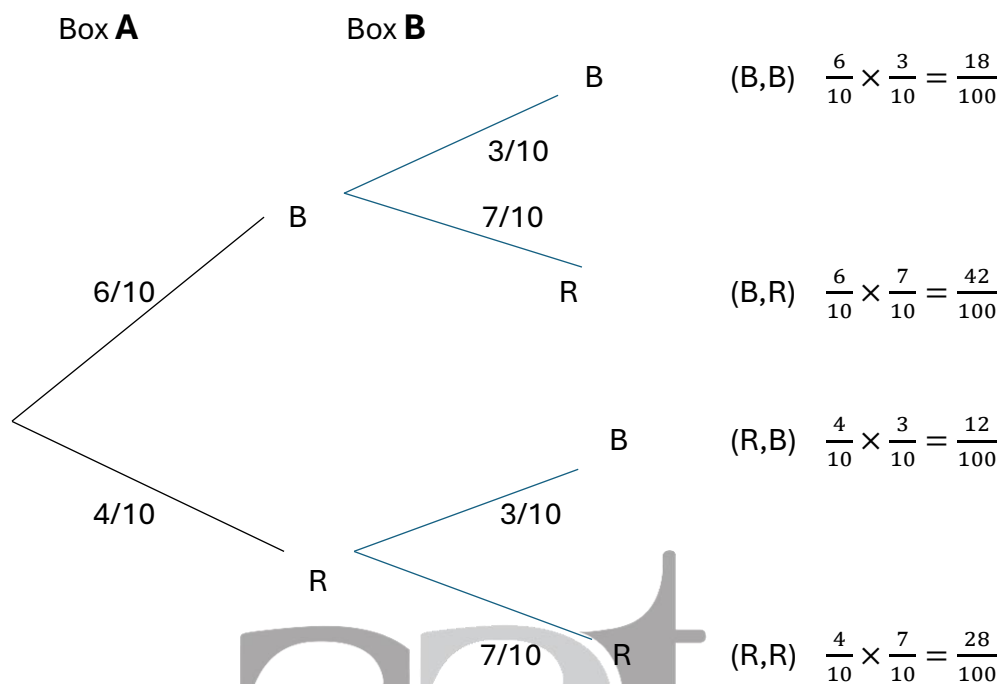
$$\text{likes Music the most } P(\text{music}) = \frac{15}{35} = \frac{3}{7} = 0.43 //$$

(02 marks)

(b)

I

B = Blue Pen
R = Red Pen



(02 marks)

(ii)

Probability of selecting at least one blue pen = $1 - \frac{28}{100} = \frac{72}{100} = \frac{18}{25}$

P (At least one blue)

Alternative Answer

$$\begin{aligned} &= 1 - [P_{(BB)} + P_{(BR)} + P_{(RB)}] \\ &= 1 - \{[(6/10 \times 3/10) + (6/10 \times 7/10) + (4/10 \times 3/10)]\} \\ &= 1 - \frac{72}{100} \\ &= \frac{18}{25} \end{aligned}$$

(02 marks)

(c)

X : Lifetime of LED lamp (hrs.)

$$\mu = 1200$$

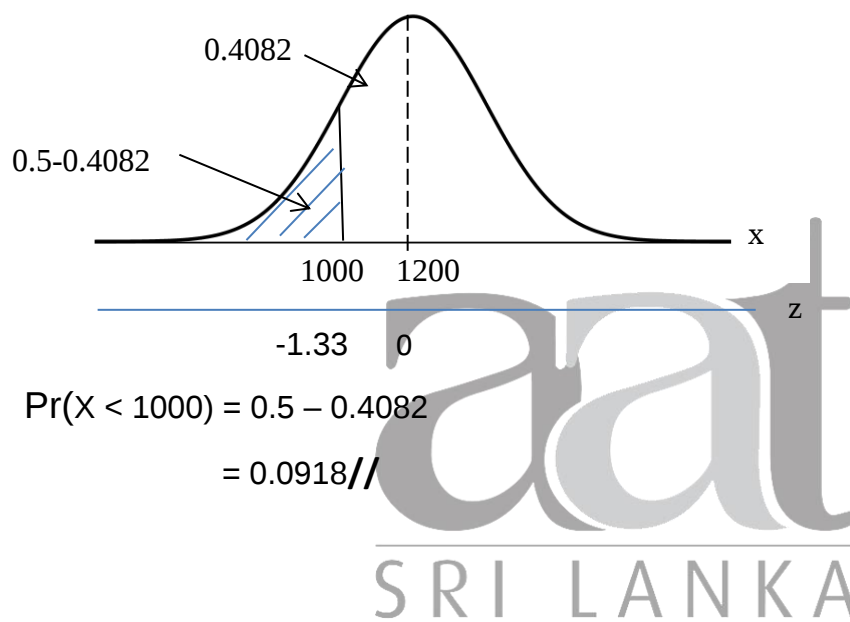
$$\sigma = 120$$

$$Z = \frac{X - \mu}{\sigma}$$

$$Z = \frac{x - 1200}{150}$$

$$Z = \frac{1000 - 1200}{150}$$

$$Z = -1.33$$



(04 marks)
 (Total 10 marks)

End of Section B

Suggested Answers to Question Six:

(A)

Chapter 02.2 / 02.9

(a)

$$S = X(1 + r/N)^{n \times N} \quad x = 50\,000, \quad n = 5, \quad r = 0.08, \quad N = 2$$

$$S = 50000(1 + 0.08/2)^{5 \times 2}$$

$$S = \text{Rs. } 74\,012.21$$

The maturity value of the investment is Rs.74,012.21

(03 marks)

(b)

(i) 1st Method (Using calculator)

$$PV = \frac{X(1-(1+r)^{-n})}{r}$$

$$X = \frac{PV \times r}{(1-(1+r)^{-n})}$$

$$PV = 450,000, \quad n = 3, \quad r = 0.15$$

$$X = \frac{450,000 \times 0.15}{(1-1.15^{-3})}$$

$$X = 197\,089.63$$

Annual installment = Rs. 197 089. 63//

Alternative Answer

$$A = \frac{SR^n(R-1)}{R^n-1}$$

$$= \frac{450,000 \times (1+0.15)^3(1+0.15-1)}{(1+0.15)^3-1}$$

$$= \frac{102,659.0605}{0.520875}$$

$$= \text{Rs. } 197,089.63$$

(02 marks)

(ii)

If annual installment Rs. 197 089.63 ,

Year	Beginning Balance	Interest (15%)	Installment	Final Balance
1	450,000.00	67,500.00	197,089.63	320,410.37
2	320,410.37	48,061.55	197,089.63	171,382.29
3	171,382.29	25,707.34	197,089.63	
		141,268.89	591,268.89	

(03 marks)

(B)

Chapter 2.6

(a)

Year	Net Cash Flow	D.F. (10%)	Discounted Cash Flow (A)
	A		
0	(150,000.00)	1	(150,000.00)
1	40,000.00	0.909	36,360.00
2	50,000.00	0.826	41,300.00
3	80,000.00	0.751	60,080.00
NPV			(12,260.00)

(04 marks)

(b)

Since the net present value of this project is negative, it can be concluded that this project is not suitable for investment. Therefore, Mi5thu should not invest in this project.

(01 marks)

(C)

Chapter 5.7.2

(a)

x	y	xy	x ²
1.5	10	15.0	2.25
2.0	9	18.0	4.00
2.5	7	17.5	6.25
2.8	6	16.8	7.84
3.0	5	15.0	9.00
3.5	4	14.0	12.25
$\sum X = 15.3$	$\sum Y = 41$	$\sum XY = 96.3$	$\sum X^2 = 41.59$

$$\sum X = 15.3 \quad \sum Y = 41, \quad \sum XY = 96.3, \quad \sum X^2 = 41.59, \quad n = 6$$

$$b = \frac{n \sum XY - \sum X \cdot \sum Y}{(n \sum X^2 - (\sum X)^2)}$$

$$b = \frac{6 \times 96.3 - 15.3 \times 41}{(6 \times 41.59 - 15.3^2)}$$

$$b = -3.2039 \cong -3.20$$

$$a = \bar{Y} - b\bar{X}$$

$$a = \frac{41}{6} - (-3.20) \times \frac{15.3}{6}$$

$$a = 14.99$$

least square regression line $Y = 14.99 - 3.20x //$

(05 marks)

(b)

Substitute $x = 4$

$$Y = 14.99 - 3.20x$$

$$Y = 14.99 - 3.20 \times 4$$

$$Y = 2.19$$

Fuel efficiency of a car with a weight of 4,000 kg is 2.19 kilometers per liter //

(02 marks)

(Total 20 marks)

End of Section C

Notice:

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