



Faculty of Health Sciences
B.Sc. (Hons) in Medical and Health Product Management
Batch –10 (Parallel to MHPM Batch 05)
BSM 1242– Basic Statistics
End-Semester Examination – 1st Year 2nd Semester –
Assignment

Date: 19th May 2026

Time: 01.30 pm – 02.30 pm (1 Hour)

INSTRUCTIONS TO CANDIDATES

- This question paper consists of **SIX (06)** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink.

Question 01

(100 marks)

A clinician aims to evaluate whether a new dietary intervention program is effective in reducing serum total cholesterol levels among adults at risk of cardiovascular disease. The currently accepted mean serum cholesterol level in this population is 200 mg/dL.

- 1.1 State the null hypothesis (H_0) and the alternative hypothesis (H_1) appropriate for this study. Clearly indicate whether the test is one-tailed or two-tailed, with justification (20 marks)
- 1.2 What would a Type I error represent in the context of this study? (20 marks)
- 1.3 What would a Type II error represent in the context of this study? (20 marks)
- 1.4 Clearly differentiate between Type I error and Type II error, using this study as an example. (20 marks)
- 1.5 Indicate one clinical consequence of committing each type of error in this scenario, particularly in relation to cardiovascular risk management. (20 marks)

Question 02

(100 marks)

The following table shows the values of x and the corresponding measured values of y for a certain experiment:

x	0	1	2
y	1	3	5

- 2.1 Using the data in the table, plot the points accurately on a graph sheet. Make sure to label the X-axis and Y-axis, choose an appropriate scale, and mark each point clearly (20 marks)
- 2.2 Draw the straight line of best fit that represents the relationship between x and y . Your line should pass as close as possible to all the points without necessarily touching every point. (20 marks)
- 2.3 From the plotted points or using calculations, determine the slope m and the y-intercept c of the line. (20 marks)
- 2.4 Write down the equation of the straight line in the form $y = mx + c$ (20 marks)
- 2.5 Using your equation, calculate the value of y when $x = 3$ (20 marks)

-End-



Faculty of Health Sciences
B.Sc. (Hons) in Medical and Health Product Management
Batch -10 (Parallel to MHPM Batch 05)
BSM 1242- Basic Statistics
End-Semester SEQ Examination – 1st Year 2nd Semester

Date: 19th of May 2026

Time: 09.00 am – 11.00 – Two Hours

INSTRUCTIONS TO CANDIDATES

- This question paper consists of **SIX (06)** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink.

Question 01

(100 marks)

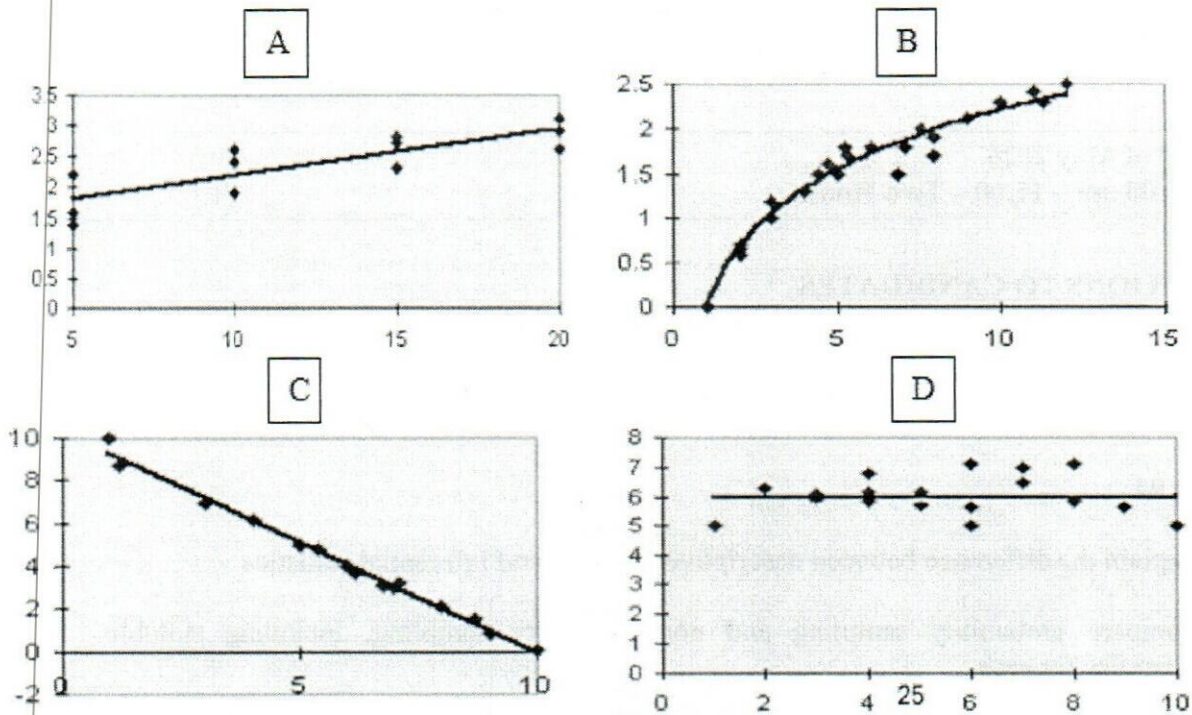
- 1.1 Explain the difference between descriptive statistics and inferential statistics (10 marks)
- 1.2 Compare probability sampling and non-probability sampling, including suitable examples for each (40 marks)
- 1.3 A researcher at a hospital wants to test whether a new stress management program reduces stress levels among nurses. She collects stress scores from 40 nurses before and after the program. The average stress score before the program was 75, and after the program, it decreased to 68.
- 1.3.1 Formulate the null and alternative hypotheses. (10 marks)
- 1.3.2 State whether a one-tailed or two-tailed test is appropriate and justify your answer. (10 marks)
- 1.3.3 State how the p-value would be used to make a decision. (10 marks)
- 1.3.4 Name possible Type I and Type II errors in this context. (10 marks)
- 1.3.5 State explain any assumptions that must be met for valid hypothesis testing. (10 marks)

Question 02

(100 marks)

- 2.1 State **two (02)** practical applications of the use of probability. (20 marks)
- 2.2 A vaccine has a 40% probability of causing mild side effects in an individual. Assuming that the occurrence of side effects in different individuals is independent, calculate the probability that both of two individuals experience side effects. (20 marks)

- 2.3 Give two (02) examples of applications where the binomial distribution is used. (20 marks)
- 2.4 Identify the following regression models mentioned in letters A, B, C and D. (20 marks)



- 2.5 Differentiate between correlation and regression by stating two (02) key differences. (20 marks)

Question 03

(100 marks)

A clinical researcher collected fasting plasma glucose (mg/dL) values from 15 patients enrolled in a metabolic study:

68, 72, 75, 80, 85, 90, 95, 100, 105, 110, 115, 130, 145, 180, 220

- 3.1 What is the role of descriptive statistics in clinical research, highlighting its limitations in inferential decision-making? (20 marks)
- 3.2 Construct a frequency distribution table with appropriate class intervals. Justify your choice of class width. (20 marks)

- 3.3 Calculate the following measures:
- 3.3.1. Median, first quartile (Q1), (5 marks)
- 3.3.2 third quartile (Q3) (5 marks)
- 3.3.3 Clearly show the method used (including position formulas where appropriate). (5 marks)
- 3.4 Calculate the Interquartile Range (IQR) and identify any potential outliers using the IQR method. (25 marks)
- 3.5 Compare IQR, standard deviation, and range as measures of dispersion. (20 marks)

Question 04**(100 marks)**

A lecturer is planning to check whether three (03) different study methods affect test scores of the students at final examination. Three (03) groups of students follow study methods: A, B, and C. The results are summarized below (confidence level = 95%):

Group	Method A	Method B	Method C
Sample size (Groups)	5	5	5
Mean score	60	65	70
Standard deviation	2	2	2

The partially completed ANOVA table is shown below:

Source	SS	df	MS	F
Between	250	2	X	Z
Within	60	12	Y	
Total	310	14		

- 4.1 Calculate the following values
- 4.1.1. X (Mean Square Between) (20 marks)
- 4.1.2 Y (Mean Square Within) (20 marks)
- 4.1.3 Z (F-value) (20 marks)
- 4.2 Compare the calculated F value (Z) to state whether there is a significant difference between the **three (03)** study methods. The critical F-value at 95% confidence level is 3.89. (40 marks)

**Faculty of Health Sciences****Bachelor of Honours in Medical and Health Product Management****MHPM 1253 Fundamentals of medical product development****Batch -10 (Parallel to MHPM Batch 05)****1st year 2nd semester****End Semester Assignment Examination****Date: 14th of May 2026****Time: 1.30 p.m. – 2.30 p.m. (One hour)****INSTRUCTIONS TO CANDIDATES**

- This question paper consists of **Two (02)** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink.

Question 01**(100 marks)**

A medical device company is planning to develop a new innovative healthcare product, starting from an initial idea through to market launch. As part of the development team, you are required to analyse and explain the full development pathway of this product.

- 1.1 Illustrate the five (05) major stages involved in the medical product development process using a flow diagram. (30 marks)
- 1.2 Based on the stages identified above, describe the key activities carried out at each stage of the development process. (70 marks)

Question 02**(100 marks)**

Explain the medical devices registration process in Sri Lanka under the National Medicines Regulatory Authority (NMRA).

In your answer, you should discuss the following aspects.

- 2.1 Definition and classification of medical devices. (20 marks)
- 2.2 Legal and regulatory framework. (20 marks)
- 2.3 Pre-requirements for registration. (20 marks)
- 2.4 Step-by-step medical device registration procedure. (20 marks)
- 2.5 Post-registration requirements. (20 marks)

**Faculty of Health Sciences****Bachelor of Honours in Medical and Health Product Management****MHPM 1253 Fundamentals of medical product development****Batch 05-Parallel to batch 10****1st year 2nd semester****End Semester SEQ Examination****Date: 14th of May 2026****Time: 09.00 a.m. – 11.00 a.m. (2 hours)****INSTRUCTIONS TO CANDIDATES**

- This question paper consists of **FOUR (04)** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink.

Question 01**(100 Marks)**

- 1.1 Define the term “medical device” according to regulatory guidelines. (20 marks)
- 1.2 List the classification of medical devices, starting from the lowest risk to the highest risk. (20 marks)
- 1.3 Give **one (01)** appropriate example for each category in the medical device classification system mentioned in question 1.2. (30 marks)
- 1.4 Explain the advantages of having classification systems for medical devices and In Vitro Diagnostic (IVD) devices in healthcare (30 marks)

Question 02**(100 marks)**

- 2.1 Explain why regulation of medical devices is essential in modern healthcare systems. (20 marks)
- 2.2 Identify and explain **five (05)** key objectives of the National Medicines Regulatory Authority (NMRA) in relation to medical device regulation. (20 marks)
- 2.3 Describe the roles and responsibilities of **four (04)** major divisions within the NMRA involved in the regulation of medical devices. (30 marks)
- 2.4 Critically evaluate the roles of key stakeholders involved in the medical devices sector. (30 marks)

Question 03**(100 marks)**

- 3.1 Explain the importance of design control in the development of medical devices (20 marks)
- 3.2 Clearly distinguish between the following design and production records used in medical device development:
 - 3.2.1 DHF (Design History file) (10 marks)
 - 3.2.2 DMR (Design Master Record) (10 marks)
- 3.3 Identify and explain three (03) major types of component specifications used in medical device manufacturing. (30 marks)
- 3.4 Discuss the regulatory and practical importance of usability testing in medical devices. (30 marks)

Question 04**(100 Marks)**

- 4.1 Differentiate between verification and validation in the context of medical device development. (20 marks)
- 4.2 Outline the key phases involved in the medical device product development lifecycle. (20 marks)
- 4.3 Compare and contrast preclinical studies and clinical studies in medical product development. (30 marks)
- 4.4 Critically evaluate the importance of post-marketing clinical investigations for medical devices. (30 marks)



Faculty of Health Sciences
Bachelor of Honours in Medical and Health Product Management
BSM 1233 Financial Accounting
Batch 05-(Parallel to batch 10)
1st year 2nd semester
End Semester SEQ Examination

Date: 4th of May 2026

Time: 9.00 a.m. – 11.00 a.m. (Two hours)

INSTRUCTIONS TO CANDIDATES

- This question paper consists of **Four (04)** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink.

Question 01

(100 marks)

- 1.1 Explain the main financial statements and the purpose of preparation (50 marks)
- 1.2 Define the below terms with examples from a hospital.
 - 1.2.1 Assets (10 marks)
 - 1.2.2 Liabilities (10 marks)
 - 1.2.3 Equity (10 marks)
 - 1.2.4 Income (10 marks)
 - 1.2.5 Expenses (10 marks)

Question 02

(100 Marks)

A private hospital provides the following information:

Item	Amount (\$)
Revenue	300,000
Expenses	210,000
Current Assets	100,000
Current Liabilities	50,000
Total Assets	200,000

- 2.1 Calculate the following ratios:
 - 2.1.1 Net profit (20 marks)
 - 2.1.2 Net profit margin (%) (20 marks)
 - 2.1.3 Current ratio (20 marks)
 - 2.1.4 Asset turnover ratio (Revenue/TA) (20 marks)

- 2.2 Interpret the results
 2.2.1. Profitability (10 marks)
 2.2.2. Liquidity (10 marks)

Question 03 (100 marks)

- 3.1 State how business transactions are identified and assessed for accounting purposes in a company. (25 marks)
 3.2 Describe the process of recording transactions in the books of original entry and posting them to ledger accounts (25 marks)
 3.3 Explain how accounting information is classified, including the preparation and purpose of a trial balance. (25 marks)
 3.4 Discuss the need for adjusting entries and their role in ensuring accurate financial reporting (25 marks)

Question 04 (100 marks)

- 4.1 A clinic purchases medical equipment for \$50,000. The equipment has a useful life of 5 years and no residual value. Required,
 4.1.1 Calculate annual depreciation based on the straight-line method. (10 marks)
 4.1.2 Calculate the carrying value after 2 years. (15 marks)
- 4.2 A hospital buys an X-ray machine for \$100,000.
 Estimated residual value = \$10,000
 Useful life = 5 years
 Required,
 4.2.1 Annual depreciation based on the straight-line method. (10 marks)
 4.2.2 Carrying value after 3 years. (15 marks)
- 4.3 A clinic purchases lab equipment for \$80,000.
 Depreciation rate = 25% per year based on straight line method depreciation. Required,
 Calculate depreciation for:
 4.3.1 Year 1 (10 marks)
 4.3.2 Year 2 (15 marks)
- 4.4 A healthcare center buys diagnostic equipment for \$60,000.
 Useful life = 4 years
 Residual value = \$4,000
 Required,
 4.4.1 Calculate annual depreciation (straight-line) (10 marks)
 4.4.2 Prepare a depreciation schedule for 2 years. (15 marks)



Faculty of Health Sciences

Bachelor of Honours in Medical and Health Product Management

BSM 1233 Financial Accounting

Batch 05- Parallel to batch 10

1st year 2nd semester

End Semester Assignment Examination

Date: 4th of May 2026

Time: 1.30 p.m. – 2.30 p.m. (One hour)

INSTRUCTIONS TO CANDIDATES

- This question paper consists of **two (02)** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink

Question 01

(100 Marks)

Siril operates a Pharmacy in Sri Lanka. The following transactions were occurred during the month of January 2026:

- (1) Introduction of Capital Rs. 2,500,000 to the business.
- (2) Obtained a bank loan Rs. 4,500,000 From Bank of Ceylon.
- (3) Purchased medical drugs worth of Rs.600,000/- on credit terms for resale from Hemas holdings.
- (4) Sold goods costing of Rs.350,000/- for Rs.500,000/- on cash basis.
- (5) Interest income receivable on the savings account was Rs.100,000/-.
- (6) Paid monthly electricity bill of Rs.30,000/-.
- (7) Paid a bank loan installment of Rs.55,000/- where Rs.10,000/- was the interest portion.
- (8) Monthly salaries payable for employees Rs. 300,000.
- (9) Selling goods worth of 600,000 to Mr. XY on 35 % on cash basis and balance on credit basis.
- (10) Purchase medical drugs worth of 800,000, 40% on cash basis and 60% on credit basis from supplier BC.

You are required to:

- 1.1 State the impact of each of the above transactions to the Accounting Equation.

Question 02**(100 Marks)**

A healthcare clinic, Care Plus Medical Centre, provides the following information for the year ended 31 December 2025,

Trial Balance Extract

Item	Amount (\$)
Service Revenue	120,000
Consultation Fees	80,000
Medical Supplies Expense	25,000
Salaries Expense	40,000
Rent Expense	18,000
Utilities Expense	7,000
Equipment	60,000
Cash	15,000
Accounts Receivable	20,000
Accounts Payable	12,000
Owner's Capital	50,000
Drawings	10,000

- 2.1 Prepare the statement of profit and loss for the year ended 31 December 2025. **(50 marks)**
 2.2 Prepare the statement of financial position as at 31 December 2025. **(50 marks)**



Faculty of Health Sciences
B.Sc. (Hons) Medical and Health Product Management
3rd Batch
BSM 1213 – Industrial Psychology
End-Semester Examination – 1st Year 2nd Semester

Date: 28th March 2025

Time: 09.00 am – 12.00 – Three Hours

INSTRUCTIONS TO CANDIDATES

- This question paper consists of **SIX** questions.
- Answer **ALL** questions.
- You should write legibly in black or blue ink.

Question 01

(100 Marks)

- 1.1 List the **four (04)** goals of Psychology. **(20 Marks)**

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- 1.2 What is the difference between Greek dualism and monism of the body and soul? **(20 Marks)**

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- 1.3 What are the concepts of **structuralism** and **functionalism** in Psychology? **(30 Marks)**

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- 1.4 Mention what is Albert Bandura's Social Learning Theory and give a real-life example. **(30 Marks)**

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Question 02**(100 Marks)**2.1 Mention **four (04)** functions of the brain.**(10 Marks)**

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2.2 What are the **three (03)** key processes of Memory?**(20 Marks)**

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2.3 State the concept of Sensation **and perception** with an example.**(30 Marks)**

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2.4 A university lecturer uses colourful slides, speaks clearly, and occasionally asks questions to keep students engaged. Some students take notes, while others rely on recalling the lecture later. Using concepts of memory, attention, and sensation & perception, explain how these factors influence students' learning in this scenario.

(40 Marks)

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Question 03**(100 Marks)**3.1 Define **Actor-Observer Bias** in Social Psychology with an example.**(30 Marks)**

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3.2 State **three (03)** examples of the **Cognitive Dissonance** concept in Social Psychology. **(30 Marks)**

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3.3 “A university student group asks you to wear a small ribbon to support mental health awareness. A week later, they ask you to attend a mental health awareness workshop or donate to a related cause”.
What is the social psychological concept used in the above scenario? **(10 Marks)**

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3.4 What are the concepts of Fluid Intelligence and Crystallized intelligence? **(30 Marks)**

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Question 04 **(100 Marks)**

4.1 Define ‘**Personality**’ in the Psychological Context. **(10 Marks)**

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4.2 What are the “**Allport’s three (03) kinds of personality traits**”? **(30 Marks)**

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4.3 What **three (03)** important structures make up the limbic system and write their functions respectively? **(30 Marks)**

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4.4 Fill in the following table with **one (01)** function of the given Neurotransmitter.

(30 Marks)

Neurotransmitter	Function
Dopamine	
Serotonin	
Glutamate	
Acetylcholine	
GABA	

Question 05

(100 Marks)

5.1 Write Short Notes on the below topics

(30 Marks)

5.1.1. Primary and Secondary Sexual Development.

(15 Marks)

5.1.2. Theory of Psychosocial Development.

(15 Marks)

5.2 How do organizational psychology and industrial psychology differ in their focus and applications within workplace settings?

(30 Marks)

- 5.3 Mention **four (04)** factors that cause job satisfaction in an employee with examples. (40 Marks)

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Question 06

(100 Marks)

- 6.1 What is Behavioural neuroscience? (10 Marks)

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- 6.2 State the **four (04)** stages of the sleep cycle with their functions. (40 Marks)

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- 6.3 Write the body's main "**fight-or-flight**" stress response pathway. (40 Marks)

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- 6.4 According to APA, list **four (04)** transferable skills. (10 Marks)

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