

**AGA KHAN UNIVERSITY EXAMINATION BOARD**

**HIGHER SECONDARY SCHOOL CERTIFICATE**

**CLASS XI**

**Business Mathematics Paper II**

**Time: 1 hour 30 minutes    Marks: 30**

**INSTRUCTIONS**

**Please read the following instructions carefully.**

1. Check your name and school information. Sign if it is accurate.

**I agree that this is my name and school.  
Candidate's Signature**

**RUBRIC**

2. There are EIGHT questions. Answer ALL the questions. Choices are specified inside the paper.
3. When answering the questions:  
  
Read each question carefully.  
Use a black pointer to write your answers. DO NOT write your answers in pencil.  
Use a black pencil for diagrams. DO NOT use coloured pencils.  
DO NOT use staples, paper clips, glue, correcting fluid or ink erasers.  
Complete your answer in the allocated space only. DO NOT write outside the answer box.
4. The marks for the questions are shown in brackets ( ).
5. You may use a scientific calculator if you wish.

Q.1. (Total 4 Marks)

- a. Ms Zubaida paid Rs 4,750 for a suit after a discount of 15% and followed by a sales tax of 10% of the actual price. Find the actual price of the suit. (3 Marks)

---

---

---

---

---

---

---

---

---

---

- b. A wire is 8 cm long but by mistake it was measured 8.3 cm. Calculate the percentage error in measuring the length of the wire. (1 Mark)

---

---

---

---

Q.2.

(Total 4 Marks)

Find the accumulated amount if Rs 37,000 is invested for 7 years at 6% per year on

i. compound interest basis.

(2 Marks)

---

---

---

---

ii. simple interest basis.

(2 Marks)

---

---

---

---

AKU-EB  
Model Paper 2022  
for Teaching & Learning only

PLEASE TURN OVER THE PAGE

Q.3.

(Total 3 Marks)

- i. Convert the linear equation  $3x + 2y = 5$  into intercepts form and the slope-intercept form.

(2 Marks)

---

---

---

---

- ii. Identify the slope and y-intercept of the line given in part i.

(1 Mark)

---

---

AKU-EB  
Model Paper 2022  
for Teaching & Learning only

**(ATTEMPT EITHER PART a OR PART b OF Q.4.)**

Q.4.

(Total 4 Marks)

- a. Find the solution set of the quadratic equation  $x^2 - 8x + 15 = 0$ , by method of completing square. (4 Marks)

---

---

---

---

---

---

---

---

---

---

---

---

- b. The area of a rectangle is  $50 \text{ cm}^2$ . Its length is 2 cm more than its breadth. Find the length and breadth of the rectangle. (4 Marks)

---

---

---

---

---

---

---

---

---

---

---

---

PLEASE TURN OVER THE PAGE

Q.5. (Total 5 Marks)

Find the solution set of the following system of simultaneous linear equations.

$$2x + 3y = 12$$

$$4x + 9y = 9$$

---

---

---

---

---

---

---

---

---

---

---

AKU-EB  
Model Paper 2022  
for Teaching & Learning only

Q.6.

(Total 4 Marks)

- a. If  $A = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 1 & 2 \\ 0 & 5 & 0 \end{bmatrix}$  and  $B = \begin{bmatrix} 0 & 2 & 3 \\ 1 & 4 & 1 \\ 3 & 0 & 0 \end{bmatrix}$ , then without using calculator find  $A \times B$ . (2 Marks)

---

---

---

---

---

---

---

---

---

---

- b. Find the values of  $p$  and  $q$  from the given matrix equation. (2 Marks)

$$\begin{bmatrix} 2 & 3p \\ 3 & 5 \end{bmatrix} + \begin{bmatrix} 1 & 2 \\ 3 & 0 \end{bmatrix} = \begin{bmatrix} 7 & 2 \\ q & 15 \end{bmatrix}$$

---

---

---

---

---

---

---

---

---

---

PLEASE TURN OVER THE PAGE

Q.7. (Total 3 Marks)

Prove that the derivative of the function  $g(x) = \sqrt{(x^3 - a^2x)^3}$  with respect to  $x$  is

$$\frac{3}{2}(3x^2 - a^2)\sqrt{x^3 - a^2x}.$$

---

---

---

---

---

---

---

---

Q.8. (Total 3 Marks)

In an arithmetic progression, the 5<sup>th</sup> term ( $a_5$ ) is 3 and the 9<sup>th</sup> term ( $a_9$ ) is 4. Find the common difference and the first term of the sequence.

---

---

---

---

---

---

---

---

END OF PAPER



Please use this page for rough work

AKU-EB  
Model Paper 2022  
for Teaching & Learning only

Please use this page for rough work

AKU-EB  
Model Paper 2022  
for Teaching & Learning only

Please use this page for rough work

AKU-EB  
Model Paper 2022  
for Teaching & Learning only

Please use this page for rough work

AKU-EB  
Model Paper 2022  
for Teaching & Learning only