AGA KHAN UNIVERSITY EXAMINATION BOARD

SECONDARY SCHOOL CERTIFICATE

CLASS IX

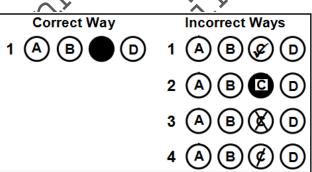
ANNUAL EXAMINATIONS 2022

General Mathematics

Time: 1 hour 40 minutes Marks: 50

INSTRUCTIONS

- 1. Read each question carefully
- 2. Answer the questions on the separate answer sheet provided. DO NOT write your answers on the question paper.
- 3. There are 100 answer numbers on the answer sheet. Use answer numbers 1 to 50 only.
- 4. In each question, there are four choices A, B, C, D. Choose ONE. On the answer grid, black out the circle for your choice with a pencil as shown below.



Candidate's Signature		

- 5. If you want to change your answer, ERASE the first answer completely with a rubber, before blacking out a new circle.
- 6. DO NOT write anything in the answer grid. The computer only records what is in the circles.
- 7. The marks obtained on the 50 MCQs will be equated to the total marks of 75 for the theory examination results.
- 8. You may use a simple calculator if you wish.

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- 1. The distance between two towns *X* and *Y* is 75 km. A family is travelling from town *X* to town *Y* and has covered a distance of 20 km from town *X*. The percentage of remaining distance to town *Y* is
 - A. 26.67%.
 - B. 55.00%.
 - C. 73.33%.
 - D. 136.36%.

2. Zahida paid *zakat* of Rs 13,500 on annual savings. Her annual saving is

(Note: Rate of *zakat* is 2.5%.)

- A. Rs 54,000
- B. Rs 54,500
- C. Rs 540,000
- D. Rs 545,000
- 3. Mr Habib owns a property worth Rs 8,250,000. His legal heirs include two sons and two daughters, where the share of a son is two times that of a daughter. The share of each daughter is
 - A. Rs 1,175,000
 - B. Rs 1,375,000
 - C. Rs 2,062,500
 - D. Rs 2,750,000
- 4. Flowers are distributed between two friends, Asma and Khalida, in the ratio 5:7. If Asma gets 35 flowers, then the number of flowers Khalida will get is

· · · ·

- A. 25 B. 35 C. 49 D. 63
- 5. Sand reads 25 pages of a book in 55 minutes. At the same pace, if he reads 65 pages of the same book, then time consumed will be
 - A. 29.5 minutes.
 - B. 59.5 minutes.
 - C. 77 minutes.
 - D. 143 minutes.

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10. Sarah worked for 200 days in the year 2020. For the year, the percentage of the days she worked was

(Note: The year 2020 consisted of 366 days.)

- A. 10%.
- Β. 54.64%.
- C. 65.66%.
- D. 182.5%.

The price of a book increased in a ratio of 6:5. If the original price of the book is Rs 240, then 11. the increased price will be

- A. Rs 200
- Β. Rs 248
- C. Rs 251
- D. **Rs 288**

All of the following are equivalent ratios of $\frac{5}{7}$ EXCEP 12.

- 25 A. 35
- 45 B.
- 63
- 10 C.
- 12
- 10 D. 14
- inite of earthing Shazia purchased a house for Rs 2,500,000. After two years, she sold it at a profit of 30%. The 13. selling price of the bouse is
 - A. Rs 750000 Β. **Rs** 3,250,000 C. 8.333.333.3 833,333.3 D.
- 14. In a summer sale, a super store reduced marked price of all the goods by 15%. If the marked price of a leather jacket was Rs 3,000, then its selling price will be
 - A. Rs 2,500
 - B. Rs 2,550
 - C. Rs 3,450
 - D. Rs 3,500
- 15. Sara bought 20 storybooks. The cost price of each storybook was Rs 200. If she sold 10 storybooks at a price of Rs 350 each and remaining 10 storybooks at Rs 150 each, then her
 - A. loss was Rs 3,500
 - B. loss was Rs 1,000
 - С. profit was Rs 1,000
 - D. profit was Rs 1,500

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- 16. If Salman sold clothes for Rs 67,000 and gained a profit of Rs 5,500, then the cost price of the clothes will be
 - A. Rs 61,500
 - B. Rs 62,500
 - C. Rs 72,500
 - D. Rs 73,500
- 17. Sana bought a car for Rs 600,000 and spent Rs 50,000 on its renovation. If she sold the car for Rs 750,000, then her profit percentage will be
 - A. 13.33%.
 - B. 15.38%.
 - C. 80.00%.
 - D. 86.67%.
- 18. Sajid bought two trousers and two shirts. The tag price of each trouser and shirt is Rs 1,000 and Rs 500 respectively. If the discount offered on the tag price of the trouser and the shirt is 5% and 10% respectively, then the discounted price of two trousers will be
 - A. Rs 100
 - B. Rs 950
 - C. Rs 1,800
 - D. Rs 1,900

5 and 4

5 and 1

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4 and

A.

B.

C.

D.

A.

B.

C.

D.

20.

19. In the expression $5 \times 5 \times 5$, the base and the exponent respectively are

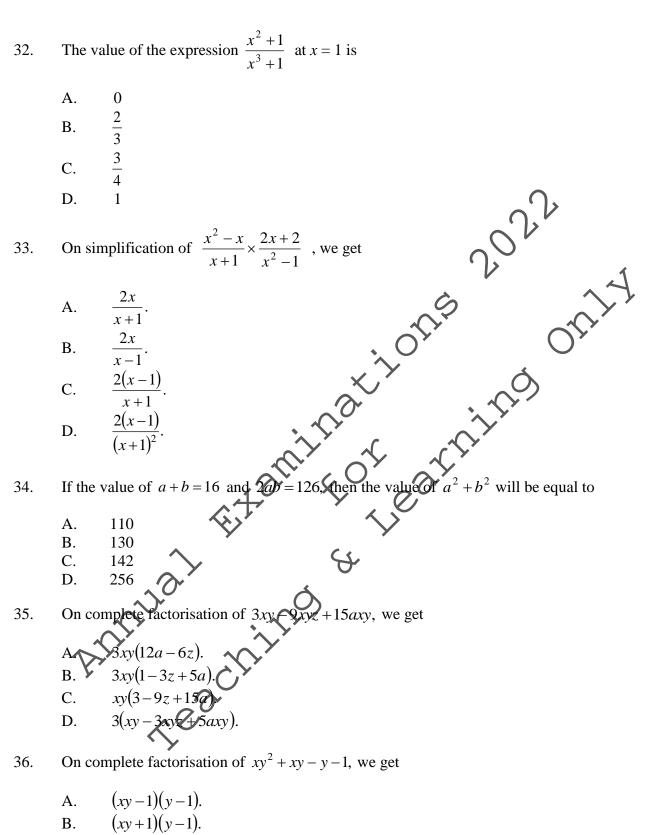
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In the given expression $\sqrt{4x}$, the radicand is 21. A. 2 $\frac{1}{2}$ B. $x^{-1}, we get$ x^{- C. 4xD. 2x22. 23. 24. 25. $\log_b a$ B. C. $\log_{c} b = a$ D. $\log_c a = b.$ In multiple logarithms, the expression $\log\left(\frac{x}{y}\right)^2$ can be written as 26. A. $4\log x - 4\log y$. B. $4\log x + 4\log y$. C. $4\log x - \log y$. $4\log(x-y)$. D.

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27.	For $\log_{\sqrt{5}} 5 = x$, the value of x is equal to
l	A1 B2
1	B2 C. 1 D. 2
28.	For $\log_4 x = 1$, the value of x is equal to
20.	A. 0
	B. 1
	$\begin{array}{ccc} C. & 2 \\ D. & 4 \end{array}$
29.	Which of the following algebraic expressions represents a polynomial?
	A. $x^2 - \sqrt{x} + 2$
	B. $x^2 - x + \sqrt{2}$
	C. $x^2 + \frac{1}{x} + \sqrt{2}$
	D. $x^{\frac{1}{2}} - x + \sqrt{2}$ In its lowest form, $\frac{6x^5}{2x^7}$ will become
30.	In its lowest form, $\frac{6x^5}{2x^7}$ will become
	A. $3x^2$.
	B. $\frac{1}{3r^2}$ \checkmark
	C. $\sqrt{\frac{3}{2}}$.
	x^{2}
\sim	
31.	In the simplest form $\frac{\sqrt{12} + \sqrt{18}}{\sqrt{2}}$ is
	A. $\sqrt{15}$ B. $\sqrt{6}+3$
	C. $2\sqrt{3}+3$
	D. $\sqrt{6} + 3\sqrt{2}$
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- C. (xy-1)(y+1).
- D. (xy+1)(1-y).

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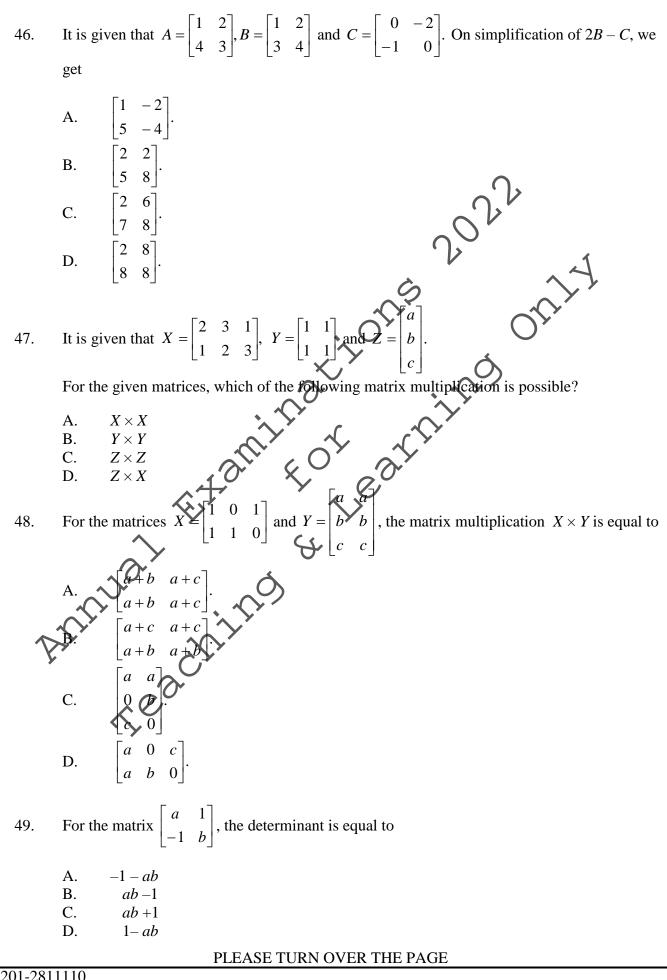
Page 9 of 16 The zeros of the polynomial (x+1)(2x-4) are 37. A. -1 and 4 B. 1 and -4C. -1 and 2ne product 2022 Ano only Altra 1 and -2D. The factors of $4y^2 - 8y + 4$ are 38. A. 2y - 2 and 2y + 2B. 2y-1 and 2y-4C. 2y-2 and 2y-2D. 2y+1 and 2y-4The polynomial $x^2 - x - 30$ is equivalent to the product 39. Α. (x-6)(x+5). ð. Ö B. (x+6)(x-5). -1, the remainder is C. (x-6)(x-5). D. -(x+6)(x+5). On dividing $2x^3 + 3x^2 - 3x$ by x 40. A. -3 B. -22 C. 3/ D. Which of the following matrices is a symmetric matrix? $\begin{bmatrix} 1 & 3 \\ 1 & 0 \end{bmatrix}$ 41. 0II. III. I only A. B. II only C. I and III D. II and III PLEASE TURN OVER THE PAGE

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42. If matrices
$$A = \begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$$
 and $B = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$, then $A \times B$ is equal to
A. $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$.
B. $\begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$.
C. $\begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix}$.
D. $\begin{bmatrix} -1 & 0 \\ 0 & -1 \end{bmatrix}$.
43. If $A = \begin{bmatrix} 3x & 6 \\ 1 & -1 \end{bmatrix}$ and $|A| = 6$, then value of x will be
A. $\begin{bmatrix} -4 \\ B. & -3 \\ C. & 3 \\ D. & 4 \end{bmatrix}$.
44. If $\begin{bmatrix} a & b \\ c & d \end{bmatrix}$ and $\begin{bmatrix} x & y \\ z & t \end{bmatrix}$ are multiplicative involve of eact other, then $\begin{bmatrix} a & b \\ c & d \end{bmatrix} \times \begin{bmatrix} x & y \\ z & t \end{bmatrix}$ is
A. $\begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$.
B. $\begin{bmatrix} 1 & 0 \\ 0 & 0 \end{bmatrix}$.
C. $\begin{bmatrix} 1x & by \\ -cz & ax \end{bmatrix}$.
45. An example of now matrix is
A. $\begin{bmatrix} 0 \\ 0 \end{bmatrix}$.
B. $\begin{bmatrix} 1 \\ 1 \\ 0 \end{bmatrix}$.
D. $\begin{bmatrix} 0 \\ -cz \end{bmatrix}$.

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The adjoint of the matrix $\begin{vmatrix} 3 & -1 \\ 3 & 2 \end{vmatrix}$ is 50. Annual Examinations 2022 Annual Examination & Learning only A. $\begin{bmatrix} 2 & -1 \\ 3 & 3 \end{bmatrix}$. **END OF PAPER**

