



**ZIAUDDIN UNIVERSITY**  
EXAMINATION BOARD

**RESOURCES FOR**  
**“SSC-IGEN. MATHEMATICS”**  
**ZUEB EXAMINATIONS 2021**



## **PREFACE:**

The ZUEB examination board acknowledges the serious problems encountered by the schools and colleges in smooth execution of the teaching and learning processes due to sudden and prolonged school closures during the covid-19 spread. The board also recognizes the health, psychological and financial issues encountered by students due to the spread of covid-19.

Considering all these problems and issues the ZUEB Board has developed these resources based on the condensed syllabus 2021 to facilitate students in learning the content through quality resource materials.

The schools and students could download these materials from [www.zueb.pk](http://www.zueb.pk) to prepare their students for the high quality and standardized ZUEB examinations 2021.

The materials consist of examination syllabus with specific students learning outcomes per topic, Multiple Choice Questions (MCQs) to assess different thinking levels, Constructed Response Questions (CRQs) with possible answers, Extended Response Questions (ERQs) with possible answers and learning materials.

## **ACADEMIC UNIT ZUEB:**

## 1. Extended Response Questions (ERQs)

### HOW TO ATTEMPT ERQs:

- Write the answer to each Constructed Response Question/ERQs in the space given below it.
- Use black pen/pencil to write the responses. Do not use glue or pin on the paper.

### ***SECTION C ( LONG ANSWER QUESTIONS)***

1. WhyROM is called Nonvolatilememory. Explain?

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Lined writing area with horizontal lines.

S. N O	ERQ	ANSWER	C L	D L										
	A man left behind him an inheritance (Tarka) worth Rs 30,000. Distribute the tarka among his four sons and three daughters such that each son get twice as much as a daughter. The deceased dies leaving behind him a debt of Rs 8000.	Each son: Rs. 4000 Each daughter: Rs. 2000												
	Find the solution set of the equations: $x+y=4$ , $2x-y=5$	$\{(3,1)\}$												
	Measure of the sizes (in centimeters) of 100 scouts are given below. Find the A.M. of their sizes <table border="1"> <tr> <td>Measure of sizes</td><td>8-10</td><td>10-12</td><td>12-14</td><td>14-16</td></tr> <tr> <td>No. of scouts</td><td>5</td><td>18</td><td>42</td><td>27</td></tr> </table>	Measure of sizes	8-10	10-12	12-14	14-16	No. of scouts	5	18	42	27	13.3		
Measure of sizes	8-10	10-12	12-14	14-16										
No. of scouts	5	18	42	27										
	Solve the following, then convert into Decimal System, multiply and thus check your answer. (i) $243_5 \times 2_5$ (ii) $342_5 \times 43_5$	(i) $14230_5$ (ii) $32411_5$												
	Find $A \times B$ , $B \times A$ , $A \times A$ and $B \times B$ when (i) $A = \{1,2\}$ , $B = \{4,6,8\}$ (ii) $A = \{a,b\}$ , $B = \{0,-1\}$ (iii) $A = \{1\}$ , $B = \{x,y,z,s\}$ Is $A \times B = B \times A$ ?	$A \times B = \{(1,4), (1,6), (1,8), (2,4), (2,6), (2,8)\}$ $B \times A = \{(4,1), (4,2), (6,1), (6,2), (8,1), (8,2)\}$ (i) $A \times A = \{(1,1), (1,2), (2,1), (2,2)\}$ $B \times B = \{(4,4), (4,6), (4,8), (6,4), (6,6), (6,8), (8,4), (8,6), (8,8)\}$ (ii) $A \times B = \{(a,0), (a,-1), (b,0), (b,-1)\}$ $B \times A = \{(0,a), (0,b), (-1,a), (-1,b)\}$ $A \times A = \{(a,a), (a,b), (b,a), (b,b)\}$ $B \times B = \{(0,0), (0,-1), (-1,0), (-1,-1)\}$ (iii) $A \times B = \{(1,x), (1,y), (1,z), (1,s)\}$ $B \times A = \{(x,1), (y,1), (z,1), (s,1)\}$ $A \times A = \{(1,1)\}$ $B \times B = \{(x,x), (x,y), (x,z), (x,s), (y,x), (y,y), (y,z), (y,s), (z,x), (z,y), (z,z), (z,s), (s,x), (s,y), (s,z), (s,s)\}$												
	Find the values of unknown $a$ , $x$ or $N$ from the following equations; (i) $\log_4 16 = x$ (ii) $\log_{16} N = \frac{1}{2}$ (iii) $\log_a 125 = 3$	(i) 2 (ii) 4 (iii) 5												

Answers the following questions using the given table: <table><tr><th>Marks Obtained</th><th>No. of Students</th></tr><tr><td>1 to 15</td><td>5</td></tr><tr><td>16 to 30</td><td>23</td></tr><tr><td>31 to 45</td><td>18</td></tr><tr><td>46 to 60</td><td>11</td></tr><tr><td>61 to 75</td><td>3</td></tr></table>	Marks Obtained	No. of Students	1 to 15	5	16 to 30	23	31 to 45	18	46 to 60	11	61 to 75	3	(i) How many class-intervals are there?	(i) 5
	Marks Obtained	No. of Students												
	1 to 15	5												
	16 to 30	23												
	31 to 45	18												
	46 to 60	11												
	61 to 75	3												
	(ii) What is the lower limit in the interval (16 to 30)?	(ii) 16												
	(iii) What is the class frequency of (46 to 60)?	(iii) 11												
	(iv) What is the number of students securing marks from 31 to 60?	(iv) 29												
(v) What is the magnitude of class-interval (16 to 30)?	(v) 15													
(vi) What is the upper limit of class-interval having 18 as class frequency?	(vi) 45													
(vii) What is the number of students securing marks from 15 to 16?	(vii) Zero													
(viii) What is the magnitude of class-interval?	(viii) 15													
(ix) In which class-interval is the least number of students?	(ix) 61 – 75													
(x) How many students secure marks from 1 to 75?	(x) 60													

A train covers the distance between two cities in 4 hours and 12 minutes at the speed of 30,000 meters per hour. What time would it take to cover the same distance if the train runs at the speed of 28,000 meters per hour?	$4\frac{1}{2}$ hour		
On the death of a person his heirs were 3 daughters, his mother and his father. A debt of Rs.15,000 was due on him. Find the shares of every heir out of a ‘Tarka’ worth Rs.51,000 so that father and mother gets $\frac{1}{4}$ each and each daughter gets $\frac{2}{9}$ of the property.	Mother: Rs.6000 Father: Rs. 6000 Each daughter: Rs.8000		
A person sends a motor car from outside Pakistan. He paid 21,000 rupees for it upto Karachi. On the amount he had to pay 80% as custom duty and a sum of 1425 rupees as insurance. Find the total inland price of the motor car.	Rs. 39225		
Jamal Khan purchased the following things and was allowed discount at different rates. How much did he pay in total: (i) Books of 550 rupees at 20%	Rs. 760,50		

	discoun.			
(ii)	Note books of Rs. 250 at 15% discount.			
(iii)	Pens of 120 rupees at 10% discount.			



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