

APOLLO

Biostatistics and data analyzing FBISE Biology Class 12 (HSSC-II)

Domain K: Biostatistics and Data Handling

8 questions | questions

Original FBISE question crops. National Curriculum 2022-23 topic.

(xv)	Which of the following best defines the mean of a data set in biostatistics?	The middle value when data is arranged in ascending order	The most frequently occurring value in a data set	The sum of all values divided by the total number of values	The difference between the highest and lowest values
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(iv)	Define the terms range and percentile in biostatistics with one example of each.	1.5+1.5	OR
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(iv)	Calculate Median and Mean of given data: 20, 14, 6, 8, 9, 12, 16, 4.
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(iv)	Calculate Median and Mean of given data: 3, 21, 6, 18, 9, 15, 12.	1+2	OR	Compare arteries and veins. (any three points)	03
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The antibiotic sensitivity test, also known as the Kirby-Bauer test, is a widely used laboratory method for determining the effectiveness of antibiotics against specific bacterial strains. Table 2.1 below presents the diameters of the zones of inhibition for

antibiotics A, B, C, D, and E, measured across five replicates (R_1 , R_2 , R_3 , R_4 , and R_5). One column displays the diameters of the zones of inhibition from control experiments, where only a filter paper disc of the same size, without any antibiotic, was applied. The diameter of antibiotic disc was 2.5 mm.

Table 2.1: Diameters of Zones of inhibition in millimeters						
Replicates	Antibiotics under investigation					
	A	B	C	D	E	Control
R_1	6.0	10.0	2.5	12.5	4.5	2.5
R_2	7.0	10.1	2.5	11.0	5.0	2.5
R_3	6.5	12.0	2.5	12.5	5.0	2.5
R_4	7.0	10.2	2.5	12.0	4.0	2.5
R_5	6.0	2.5	2.5	12.5	5.0	2.5
Average/ Mean	6.5	10.5	2.5	12.1	4.7	2.5

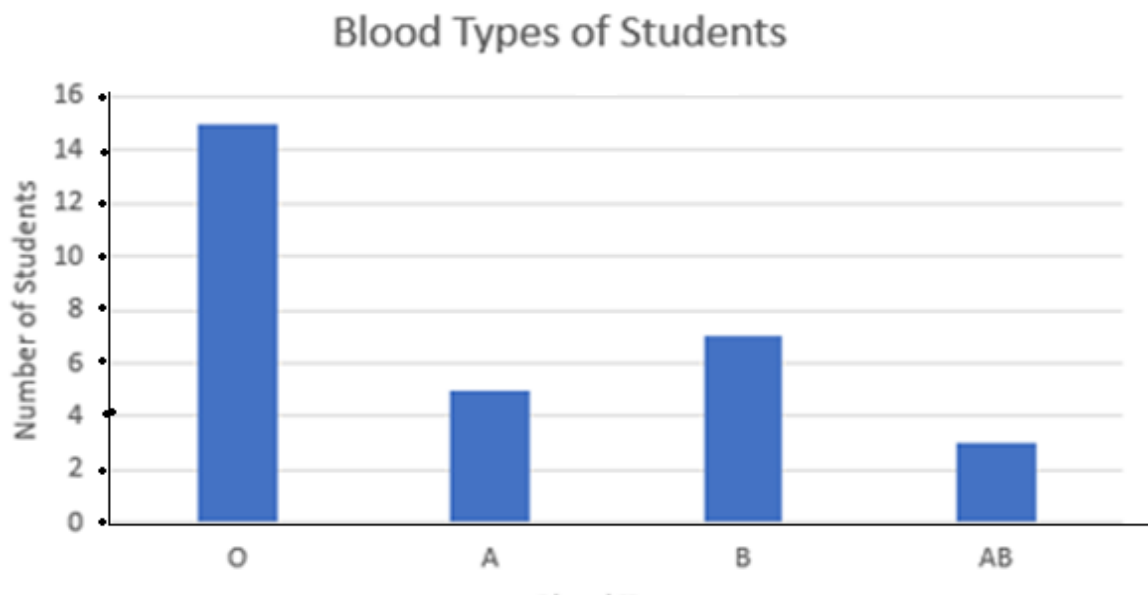
- Analyze the data given in table 2.1 and pinpoint the anomalous reading: [1]
- Interpret the data given in table 2.1 and conclude the most effective and least effective antibiotics with reason for your interpretation. [2]
- What is the purpose of control experiment in this test? [1]
- Draw a bar chart of the data presented in table 2.1 and label it. [2]

Following is the data of height of 10 students studying in class 12 (same age group):

Student Names	Height (cm)
A	180
B	182
C	175
D	171
E	160
F	172
G	170
H	158
I	165
J	168

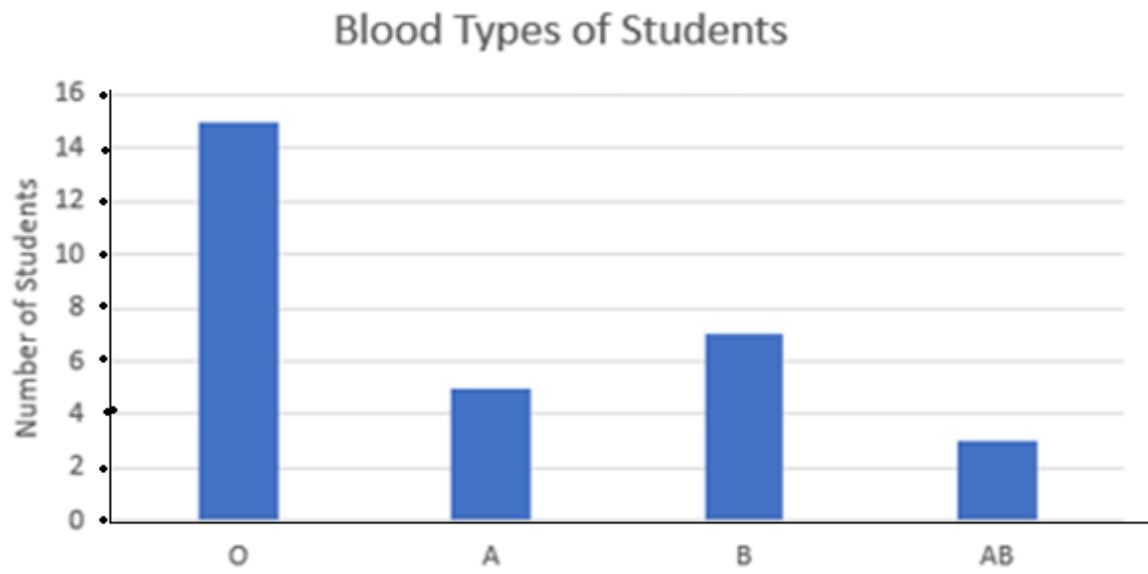
- Calculate the mean value of the data given in table 3.1. Also show your working. [1]
- Calculate the standard deviation of the data given in table 3.1. Show your working.[3]
- Calculate standard errors, draw a bar chart and show the error bars. [1+1]

Q1. A group of students performed ABO blood group testing in biology lab. After getting results, the data was plotted into following graph.



- Name the type of graph shown. Which variable is on x-axis and which one is on y-axis? (1)

Q1. A group of students performed ABO blood group testing in biology lab. After getting results, the data was plotted into following graph.



ii. Name and sketch another type of graph which can be plotted by using this data. (1)
