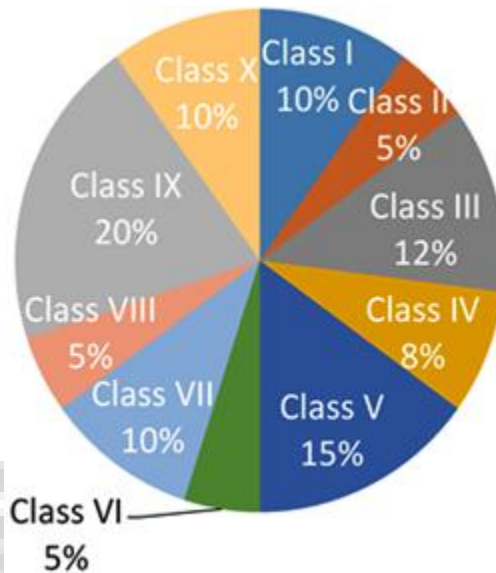# Date Interpretation Mixed Chart Questions Quiz for IBPS PO Mains, SBI PO Mains, RBI Grade B Exams.

Data Interpretation Mixed Chart Quiz 27

Direction: Study the following pie chart and bar chart carefully and answer the questions based on it.

The pie chart gives the breakup of all the students in Delhi public school on the basis of the class they study in:

Total number of students are 200

The Table (I) gives the percentage of boys in each class and the classes are divided into three groups in Table II

Table I			Table II	
Class	**Percentage of Boys**		**Group**	**Classes**
I	20			
II	50			
III	50		A	I, II and III
IV	50			
V	20			
VI	10		B	IV, V and VI
VII	20			
VIII	40			
IX	60		C	VII, VIII, IX and X
X	50			

Special data Table III
$^{200}C_3 = 200$
$^{54}C_1 = 4$
$^{86}C1 = 5$
$^{90}C_1 = 10$
$^{144}C_3 = 144$
$^{30}P_{30} = 300$
$^{25}P_{25} = 25$
$^{6}P_6 = 6$

1. If three students are selected randomly, what is the probability that all selected students are from different group (use data only from table III)

A. 1   B. 0.5   C. 0.05   D. 0.2   E. 0.3

2. If three students are selected randomly, what is the probability that no student are selected from group B (use data only from table III)

A. 1   B. 0.72   C. 0.25   D. 0.32   E. 0.5

3. If all students of class V sit in a row randomly. What is the chance that all boys do not sit together? (use data only from table III)

A. 0.5   B. 0.6   C. 0.7   D. 0.8   E. None of these

4. If two students are selected randomly from class IX. What is the probability that both are of same sex

A. 0.5   B. 0.23   C. 0.11   D. 0   E. 0.7

5. One student is select from either of class II or III. What is the probability of selecting a boy?

A. 0.3   B. 0.2   C. 0.5   D. 0.6   E. 0.4

Correct Answers:

1	2	3	4	5
A	B	A	A	C

Common explanation

Class	Number of students	Number of boys	Number of girls
I	20	4	16
II	10	5	5
III	24	12	12
IV	16	8	8
V	30	6	24
VI	10	1	9
VII	20	4	16
VIII	10	4	6
IX	40	24	16
X	20	10	10

Explanations:

1. Following the common explanation we get ;
Number of student in group A = 20 + 10 + 24= 54
Number of student in group B = 16 + 30 + 10 = 86
Number of student in group C = 20 + 10 + 40 + 20 = 90
Total number of student = 200
$N(S) = {}^{200}C_3 = 200$ ………. (Data use from table III)
$N(E) = {}^{54}C_1 \times {}^{86}C_1 \times {}^{90}C_1 = 4 \times 5 \times 10 = 200$

$P(E) = \dfrac{N(E)}{N(S)} = \dfrac{200}{200} = 1$

Hence, option (A) is correct.

2. Following the common explanation we get ;
Number of student in group A = 20 + 10 + 24 = 54
Number of student in group B = 16 + 30 + 10 = 86
Number of student in group C = 20 + 10 + 40 + 20 = 90
Total number of student = 200
$N(S) = {}^{200}C_3$
3 student can be selected from 54(group A) + 90(group C) = 144 student in $^{144}C_3$
$N(E) = {}^{144}C_3$

$P(E) = \dfrac{N(E)}{N(S)} = \dfrac{144}{200} = 0.72$

Hence, option (B) is correct.

3. Following the common explanation we get ;

Number of student in group A = 20 + 10 + 24 = 54

Number of student in group B = 16 + 30 + 10 = 86

Number of student in group C = 20 + 10 + 40 + 20 = 90

Total number of student in class V = 30

Number of boys in class V = 6

Number of girls in class V = 24

Total number of arrangement = $^{30}P_{30}$ = 30!

Consider all the boys as one we have 24 girl + 1 boys = 25 person which can be arranged in 25! Ways i.e. 25!

But 6 boys can also be arranged in 6! Ways among themselves

So in 25! × 6! Ways can be person be arranged so that boys are together

$$= \frac{25! \times 6!}{30!} = \frac{25 \times 6}{300} = 0.5 = P \text{ (boys are together)}$$

∴ All boys are not together = 1 − 0.5 = 0.5

Hence option (A) is correct.

4. Following the common explanation we get ;

Total number of student in class IX = 40

Number of boys 24

Number of girls =16

$N(S) = {}^{40}C_2 = 780$

$N(E) = {}^{24}C_2 + {}^{16}C_2 = 276 + 120 = 396$

$$P(E) = \frac{N(E)}{N(S)} = \frac{396}{780} = 0.5$$

Hence, option (A) is correct.

5. Following the common explanation we get ;

Since there are two classes, each equally likely to be chosen, the probability of choosing either class is ½

If class II is chosen, the probability of selecting a boy $= \frac{1}{2} \times \frac{5C1}{10C1} = \frac{1}{4}$

Similarly, if class III, the probability of selecting a boy $= \frac{1}{2} \times \frac{12C1}{24C1} = \frac{1}{4}$

Since, the two event are mutually exclusive, we use addition therefore, the probability of selecting a boy from either class is

$$\frac{1}{4} + \frac{1}{4} = \frac{1}{2}$$

Hence, option (C) is correct.