## **MATHEMATICS**

1	If the mean of n observations is 12 and the sum of the observations is 132, then find the value of n.				
	(A) 9	(B) 10	(C) 11	(D) 12	
ANS	. C				
2	The range of the data	a 14, 15, 18, 25, 11, 40	, 36, 30 is :		
	(A) 29 (B) 2 <sup>2</sup>	7 (C) 24	4	(D) 26	
ANS	. A				
3	The median of 5, 7, 9	9, 10, 11 is :			
	(A) 7	(B) 9	(C) 11	(D) 10	
ANS	. B				
4	The mean of the data	a 15, 20, 20, 16, 22, 17	, 23, 18, 24, 25,	is :	
	(A) 26	(B) 22	(C) 20	(D) 18	
ANS	. C				
5	If the mode of 22, 21	23, 24, 21, 20, 23, 26	x and 26 is 23	, then x is : $(\mathbf{D}) \ge 1$	
	(A) 20	<b>(B)</b> 21	(C) 23	(D) 24	
ANS			C 1.1 1	C	
0	If the mean of 5, $/$ , x	(D) 7	find the value $C$	DI X.	
ANG	(A) 0 C	(B) /	(C) 8	(D) 9	
ANS 7	. C The mean of not a sne	drig come og the meer	of a Ir and a	Then which of the following is	
/	correct?	I I Is same as the mean	i oi q, 2r and s.	Then which of the following is	
	(A) $\mathbf{p} = \mathbf{q} = \mathbf{r}$	(B) $q = r = s$	(C) $q = r$	(D) p = r + s	
ANS	. D		<b>x</b> 0 1		
8	The mean weight of the group, the what i	s the mean weight of the	If a student we he remaining stu	idents?	
	(A) 20 kg	(B) 21 kg	(C) 19 kg	(D) None of these	
ANS	. B				
9	Find the area of the cm, and diameter of	shaded part of the give the both smaller circles	en figure, if the s is 14 cm.	radius of the larger circle is 21	
	(A) 1078 cm <sup>2</sup>	(B) 1098 cm <sup>2</sup>	(C) 1100 cm <sup>2</sup>	(D) 908 cm <sup>2</sup>	
Sol.	Required Area = $\pi$ (	$(21)^2 - 2 \times \pi (7)^2 = 441$	$\pi - 98\pi = 343\pi$	$\tau = 1788 \text{ cm}^2$	
ANS	. A				
10	A sum of M12,500 a	mounts to M15,500 in	4 years at the r	rate of simple interest. What is	
	the rate of interest?				
	(A) 5%	(B) $6\%$ (C) $7\%$	%	(D) 8%	
Sol.	S.I. = 15500 - 12500	M = M3000			
	$\Rightarrow$ 3000 =	$\Rightarrow$ R = 6%			
ANS	. B				

11	The range of true about x? these	the data 15, 18, 17 (A) $x > 18$	(B) x	x, 12, 10, 9, < 9	15 is 9. W (C) 9 :	hich of the for $\leq x \leq 18$ (D)	llowing is None of
ANS	. C						
12	There are 7 multiplied by	observations in the 2, then find the new	ne data a w mean.	nd their me	an is 11.	If each obser	rvation is
ANG	(A) 11	(B) 13		(C) 22	(D) No	one of these	
ANS Dimont	C	. These question	ana haa	d on the fol	llowing do	to Dood the	following
bar gr	aph and answ	er the questions.	s alt base		nowing ua	ta. Keau the	lonowing
13	In which year	is the difference b	etween th	e sales of the	e scooters a	nd the sales o	f cars was
	least? 2008	(A) 2005	(B) 2	006	(C) 20	007	(D)
ANS	. B						
14	Total number	of vehicles (scoote	ers and car	s) sold in the	years 2005	5 and 2006 is :	
	(A) 26100	(B) 28500		(C) 25100		(D) 27500	
ANS	. A	1:00				· ·	
15	Find the maximum the given period	mum difference be od.	etween sa	les of scoote	rs and that	of cars, in an	y year, in
	(A) 1500	(B) 1700		(C) 1800		(D) 2000	
ANS	. C						
16	Find the total (A) 26000	number of scooter (B) 27000	s sold in t	he four years (C) 31000		(D) 32000	
ANS	. D						
17	From a series mean remains	of 50 observations the same. What we	s, an obsei as the mea	vation with in of 50 obse	the value o rvations?	f 45 is droppe	ed, but the
	(A) 50	(B) 49		(C) 45	(D) 40	)	
ANS	. C		-1				
18	A bastman sc	ores 80 runs in his	s 6 <sup>th</sup> innin	g and thus ir	ncreases his	s average by 3	5. What is
	his average af	ter $6^{\text{m}}$ inning?	$(\mathbf{C})$	6	$(\mathbf{D})$		
ANC	(A) 00 D	(B) 55	(C) 5	0	(D) 65	)	
ANS . Sol	D Let the average	e score of 5 inning	$\mathbf{r} = \mathbf{v}$				
501.	the total so	c score of 5 innings $= 5$	,5 — л 5 v				
	And total scor	re of 6 innings = (5)	$\mathbf{x} + 80$				
	ATO.	c of o minings (5	x + 00)				
	→	$\mathbf{x} = 50$					
	$\rightarrow$ Average	ve after 6 innings =	= x + 5 = 4	50 + 5 = 55			
19	Find the altitu	de of a triangle wh	ose base i	s 40  cm and	area is 240	cm <sup>2</sup> ?	
.,	(A) 8  cm	(B) 12 cm		(C) 14 cm		(D) 10 cm	
ANS	. B			( )			
Sol.	Area = $\times$ base	$e \times height \Rightarrow$	240 =	$= \times 40 \times h$	$\Rightarrow$	h = 12  cm	
20	Find the cost	of painting a wall	l with din	nension 25 n	n by 9 m a	at the rate of	M120 per

square metre.

Sol	(A)M25000 Area of wall = $25 \times 9$	(B) M24550 $P = 225 \text{ m}^2$		(C) M29450		(D) M27000
	Cost of painting the v	$vall = 225 \times 12$	20 = M27	7000		
ANS 21	D Priya earned M25000 Priya in five months.	) in a month. T What was the	he giver	n graph shows th of money she sp	ne amo ent in f	unt of money saved by five months?
ANG	(A)M970000	(B) M100000		(C) M107000		(D) M117000
ANS 22	The mean of three nu lowest is 19, what co (A) 81	umbers is 40. A uld be highest j (B) 40	All the th possible	ree numbers are number of rema (C) 100	e differ iining t	ent natural numbers. If wo numbers? (D) 71
ANS . 23	The given bar graph Lake E and Lake C.	shows heights	of selec	ted lakes. Find	the diff	ference in elevation for
ANS	(A) 420 m B	(B) 604 m		(C) 504 m		(D) 692 m
24	Find the mode from t	he following d	ata :			
ANS	(A) 32 B	(B) 37	(C) 30		(D) 34	
25	In the frequency distrist is missing.	ribution of disc	rete data	given below, th	ne frequ	uency p against value 3
	If the mean is 2.5, the $(A) 0$	en the missing	frequenc	y p will be		(D) 40
Sol.	Mean = =	(D) 10		(C) 50		
ANS	$\Rightarrow 400 + 6p = 44$	$40 + 5p \implies$	p = 40			
26	If the mean of 4, x and $(A)$ 10	nd y is 6, then f (B) 12	ind the n	nean of x, y and $(C)$ 3	10.	(D) 8
Sol.	$\Rightarrow x + y = 8$	= 14(i)				
ANS Direct	. D tion (0 7 & 8) • The f	ar granh helo	w show	s the number o	fcars	nassing through a tall
Direct	tax.			s the number o	I cars	passing through a ton
27	Find the total number (A) 500	r of cars passed (B) 600	l through	the toll tax. $(C) 625$		(D)700
ANS 28	. B Find the percentage of	(L) ooo	as atleas	t 2 passengers		(2)/00
20	(A) (B)	(C)	as alleds	(D)		
ANS .	А					

Q	The Tourists visit the Place on 7 days of a certain week was recorded as follows:					
29	On which day is the	number of tourists max	kimum?			
	(A) Sunday	(B) Wednesday	(C) Tuesday	(D) Saturday		
ANS :	(A)					
30	On which day is the	number of tourists min	imum?			
ANS	(A) Friday : (A)	(B) Monday	(C) Thursday	(D) Saturday		
31.	On which day 60 tour	rists visit?				
	(A) Monday	(B) Tuesday	(C) Friday	(D) Sunday		
ANS :	(C)					
32.	What is the difference	e between the number	of tourists visiting on H	Friday and Monday?		
	(A) 10	(B) 24	(C) 38	(D) 5		
ANS	:(D)					
33.	The sum of the numb	er of tourists visiting o	n Sunday and Friday is	5		
	(A) 160	(B) 60	(C) 220	(D) 100		
ANS :	(C)					
34.	The difference betwee (A) 50	een the maximum and r (B) 80	minimum number of to (C) 90	ourists is (D) 100		
ANS	: (D)					
35.	A batsman scored the following number of runs in six innings: 35, 30, 45, 65, 39, 20 The mean runs scored by him in an inning is					
	(A) 39	(B) 38	(C) 37	(D) 40		
ANS	: (A)					

- 36. The mean of the numbers 10,20, 30 and 40 is
  - (A) 20 (B) 25 (C) 30 (D) 50

ANS : (B)

- 37 The range of the weights (in kg) of a students of a class given below is:
  49, 60, 47, 50, 47, 59, 58, 45, 53

  (A) 10
  (B) 15
  (C) 20
  (D) 2

  ANS : (B)
- 38
   The marks of 11 students of a class are as given below:

   78, 11, 99, 63, 94, 6, 78, 36, 30, 55, 22

   The range of marks is

   (A) 90
   (B) 91
   (C) 92
   (D) 93

ANS : (D)

39 The rainfall (in mm) in a city on 7 days of a certain week was recorded as follows:

Day	Rainfall (in mm)
Monday	0.0
Tuesday	0.0
Wednesday	1.0
Thursday	2.0
Friday	3.0
Saturday	5.0
Sunday	4.0

On how many days was the rainfall less than 6 mm?

(A) 0 (B) 3 (C) 6 (D) 7

ANS :(D)

- 40. The mode of the distribution 3,5, 7, 4, 2, 1, 4, 3, 4 is
  - (A) 7 (B) 4 (C) 3 (D) 1

ANS:(B)

41. The marks of some students are as given below: 30, 31, 32, 32, 33, 32, 34, 35, 30, 31, 33, 32 Find the mode of their marks.

(A) 30 (B) 31 (C) 32 (D) 33	
-----------------------------	--

ANS : (C)

42	The median of the distribution 2, 3, 4, 7, 5, 1, 6 is						
	(A) 1	(B) 2		(C) 3	(D) 4		
ANS	: (D)						
43.	The median of	f the data 20, 3	0, 40, 10, 15, 2	5, 35 is			
	(A) 20	(B) 25	i	(C) 30	(D) 40		
ANS :	(B)						
44.	Which of the f	following state	ments is true?				
	<ul> <li>(A) The mode is always one of the numbers in a data</li> <li>(B) The mean is always one of the numbers in a data</li> <li>(C) Mean &lt; Mode in a data</li> <li>(D) Median &lt; Mode in a data</li> </ul>						
ANS	: (A)						
45.	A coin is tosse	ed. What is the	probability of	getting head?			
	(A) 0	(B) 1	$(C)\frac{1}{2}$	(D) 2			
ANS	: (C)						
46.	A coin is toss	ed. What is the	e probability of	getting tail?			
	(A) 1	$(B)\frac{1}{2}$	(C) 2	(D) 0			
ANS	: (B)						
47.	A die is throw	vn. What is the	probability of	getting 1?			
	(A) 0	(B) 1	$(C)\frac{1}{2}$	$(D)\frac{1}{6}$			
ANS	: (D)		2	0			
48.	A die is throw	n. What is the	probability of §	getting 6?			
	(A) 0	$(B)\frac{1}{6}$	$(C)\frac{1}{2}$	(D) 1			
ANS	: (B)	~	_				

Read the following bar graph and answer the following related questions Q(49-56):



	(A) Vimla	(B) Saroj	(C) Indu	(D) Apala
ANS :	(A)			
55.	The difference between the r difference between the marks	narks obtained by Vim obtained by Meenu ar	ıla and Saroj is how ma 1d Saroj?	ny times the
	(A) 2	(B) 3	(C) 4	(D) 6
ANS :	: (A)			
56	How many girls have got ma	rks less than 600?		
ANS	(A) 1 : (D)	(B) 2	(C) 3	(D) 4

Sale of Mathematics and English books in the year 2005, 2006, 2007 and 2008 are given below :

Years	Mathematics	English
2005	200	100
2006	300	250
2007	400	200
2008	500	500

Answer the following related questions Q(29 - 33):

57. In which year is the difference in the sale minimum?

(A)2008	(B) 2007	(C) 2006	(D) 2005
			· · ·

ANS : (A)

58 In which year is the difference in the sale maximum?

(A)2005	(B) 2006	(C) 2007	(D) 2008
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ANS : (C)

59. The ratio of sales in the year 2005 is

(A) 2 : 1 (B) 3 : 1 (C) 4 : 1 (D) 2 : 3

ANS : (A)

60 The rise in the sale of Mathematics books from 2005 to 2008 is

(A) 100	(B) 200	(C) 300	(D) 400

ANS :(C)

61. The fall in the sale of English books from 2006 to 2007 is

(A) 50 (B) 100 (C) 150 (D) 200

ANS:(A)

Number of children in six different classes are given below :

Number of children
400
350
320
280
225
200

Answer the following related questions Q (34 - 40).

62 In which class is the number of children maximum?

(A) 6 (B) 7 (C) 8 (D) 9

ANS : (A)

63. In which class is the number of children minimum?

(A) 8 (B) 9 (C) 10 (D) 11

ANS:(D)

64. The difference between the maximum and minimum number of children is

(A	.) 100	$(\mathbf{B})$	200 (	C	) 300 (	D	) 40	00
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ANS :(B)

65 . In how many classes is the number of children less than 500?

(A) 2 (B) 4 (C) 5 (D) 6

ANS : (D)

66 In how many classes is the number of children more than 100?

	(A) 6	(B) 4	(C) 3	(D) 1
ANS	: (A)			
67.	The ratio of the num	ber of children of class	s 6 and 11 is	
	(A) 3 : 1	(B) 2 : 1	(C) 2 : 3	(D) 1 : 4
ANS :	(B)			
68	The total number of	children is		
	(A) 1775	(B) 1675	(C) 1575	(D) 1785
ANS :	(A)			
69	The difference betwe	en the upper and lower	r limit is called	
	(A) group	(B) class size	(C) class interval	(D) class mark
ANS	: (B) class size			
70	A process which resu	lts in some well define	ed outcome is known as	5:
	(A) outcome	(B) event	(C) experiment	(D) frequency
ANS	: (C) experiment			
71	What is the median o	f the data 46,64,87, 41	,58,77,35,90,55,33,92?	
	(A) 87	(B) 77	(C) 58	(D) 60.2
ANS :	(C) 58			
72	In a bar chart, a bar o	f length 4 cm is drawn	If $1 \text{ cm} = 1.5 \text{ l}$ , what	will 4 cm be ?
	(A) 3 l	(B) 6 1	(C) 5 l	(D) 9 1
ANS : 1 cm =	(B) 61 = 1.5 /, 2 cm = 3 /, 3 cm	n = 4.5 l, 4 cm = 6 l.		
73	The mean weight of 1 of girls is 40 kg. The	00 students in a class refore, the number of b	is 46 kg. The mean we ooys is:	ight of boys is 50 and
	(A) 50	(B) 60	(C) 70	(D) 65

ANS : (B) 60

74 The probability of an experiment cannot be greater than:

(A) 0 (B) 0.5 (C) 1 (D) 2

ANS : (C) 1

The maximum probability an event can have is  $\frac{100}{100} = \frac{1}{1} = 1$ 

75 The number of times an observation occurs in a data is called its

(A) Range	(B) Raw data	(C) Interval	(D) Frequency
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- ANS : (D) Frequency
- <sup>76</sup> Suppose in a game of ludo, the player requires 1, 3, 5 and 6 to be safe. What is the probability of being unsafe ?
- (A) $\frac{4}{6}$  (B) $\frac{3}{6}$  (C) $\frac{2}{6}$  (D) 1

ANS : (C) $\frac{2}{6}$ 

Since the safe places are 4, unsafe places are 2. So probability =  $\frac{2}{6}$ 

77 When a coin is thrown, total number of possible outcomes is \_\_\_\_\_.

(A) 5 (B) 2 (C) 6 (D) None of these

ANS : (B) 2

78 Represent the frequency: 29 in Tally Marks.

(a)	JHL JHL JHL IIII	(b)	JHL JHL JHL JHL IIII
(c)	THE THE IIII	(d)	IN IN IN IN IN IN IN

ANS.

(b) **ТН. ТН. ТН. ТН. ТН. 1**111

10 = 141 141, 20 = 141 141, 141, 141, 29 = 141 141, 141, 141, 141, 111

79 There are 2 red, 3 blue and 5 black balls in a bag. A ball is drawn from the bag without looking in to the bag. What is the probability of getting a non-blue ball?

$$(A)\frac{3}{5} \qquad (B)\frac{7}{10} \qquad (C)\frac{2}{5} \qquad (D) \text{ None of these}$$

$$ANS: (B)\frac{7}{10}$$

$$80 \qquad \text{Hari is playing snakes and ladders. He wants a six on first dice and a four on other so as to win. What is the probability for him to win if 2nd dice already has a 4?$$

$$(A)\frac{6}{6} \qquad (B)\frac{1}{6} \qquad (C)\frac{4}{6} \qquad (D)\frac{1}{2}$$

ANS : (B) $\frac{1}{6}$ 

81 The mean of 6, y, 7, x and 14 is 8. Which of the following is true?

(A) x+y=13 (B) x-y=13 (C) 2x+3y=13 (D)  $x^2+y=15$ 

ANS : (A) x+y = 13

82 There are 2 red, 3 blue and 5 black balls in a bag. A ball is drawn from the bag without looking in to the bag. What is the probability of getting a non-red ball?

(A)
$$\frac{4}{5}$$
 (B) $\frac{2}{5}$  (C) $\frac{3}{5}$  (D) None of these  
ANS : (A) $\frac{4}{5}$ 

83 If 1 cm = 15 students, what will be the length of line for 90 students ?

(A) 4 cm (B) 6 cm (C) 6 students (D) 9 cm

ANS: (B) 6 cm

1 cm = 15 students, 3 cm = 45 students, 6 cm = 90 students.

- 84 The mean of five numbers is 27. If one of the numbers is excluded, the mean gets reduced by 2. What is the excluded number?
  - (A) 35 (B) 27 (C) 25 (D) 40

ANS : (A) 35

- Find the mean if the sum of 18 observations is 90.
  - (A) 5 (B) 4 (C) 6 (D) 9
- ANS : (A) 5

86 The arithmetic mean of five given numbers is 85. What is their sum?

(A) 425 (B) 85 (C) A number between 85 and 425.(D) A number greater than 500.

ANS : (A) 425

87 What is the probability of getting a sum of 13 when 2 dice are rolled ?

(A)
$$\frac{13}{12}$$
 (B) $\frac{1}{12}$  (C) $\frac{4}{12}$  (D) none of these

ANS : (D) none of these

Two dice can give a maximum of 6 + 6 = 12 as outcome.

88 Two dice are thrown, find and number of outcomes.

(A) 12 (B) 6 (C) 36 (D) None of these

ANS: (C) 36

89 If we represent the following in Tally Marks:

## 

What would it mean in whole numbers?

(A) 24 (B) 22 (C) 28 (D) 23

ANS : (D) 23

90 There are 2 red, 3 blue and 5 black balls in a bag. A ball is drawn from the bag without looking in to the bag. What is the probability of getting a black ball?
(A) 2/5
(B) 3/5
(C) 1/2
(D) None of these
ANS : (C) 1/2
91 How many possible outcomes can we get if we toss a coin and throw a dice respectively ?
(A) 6, 2
(B) 2, 6
(C) 1, 3
(D) 3, 1

ANS: (B) 2, 6

A coin has 3 sides and hence 2 outcomes and a dice has 6 faces, so 6 outcomes.

Favourite Sport	Cricket	Basket Ball	Swimming	Hockey	Athletics		
Watching	1240	470	510	430	250		
Participating	620	320	320	250	105		
92 Find the Me	dian of peopl	e watching spo	orts				
(A) 1240	(B)	) 470	(C) 510		(D) 430		
ANS : (B) 470 When arrang	ged in ascend	ing order, 470	is middle term				
93 Which sport	is least popu	lar ?					
(A) Athletic	s (B)	) Cricket	(C) Bask	et Ball	(D) Hocke		
ANS : (A) Athleti Athletics is watched	cs 1 by 250 peop	ıle.					
94 Find Mean of	of people part	icipating in spo	orts.				
(A) 320	(B)	) 330	(C) 323		(D) 340		
ANS : (C) 323 620 + 320 + 320 + 2 5	$\frac{50+105}{5} = \frac{161}{5}$	<u>15</u> =323					
95 Which sport	Which sport is most popular ?						
(A) Cricket	(B)	) Basket Ball	(C) Swim	nming	(D) Hocke		
Answer: (A) Cricke Cricket is watched b	t oy 1240 peop	le.					
96 In the class-	In the class-interval 70-80, 80 is the						
(A) lower lin	mit (B)	) upper limit	(C) frequ	ency	(D) range		
ANS : (B) upper lin	nit						
97 Mode of the	observations	1, 2, 2, 4, 4, 5	, 6, 7, 7, 7, 8, 8	8, 9 is :			
(A) 2	(B)	) 4	(C) 7		(D) 8		

Questions 25-28 are based on the given table :

## ANS :(C) 7

7 is repeated the most number of times.

- 98 The heights of six mountains are 8200 m, 6000 m, 8600 m, 7500 m, 8800 m and 6500 m. Based on this information, answer the questions given. Rakesh and Sanjay planned to go trekking on any of these mountains. They wrote the heights on chits of paper, shuffled them and picked one. What is the probability that the height picked is the maximum? (A) $\frac{1}{3}$  (B) $\frac{2}{3}$  (C) $\frac{1}{6}$  (D) $\frac{1}{4}$ ANS : (C) $\frac{1}{6}$
- 99. The median of 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 is :

SOL. There are 11 obs. So Median =  $\left(\frac{11+1}{2}\right)^{th} obs = 6^{th} obs = 6$ ANS : B

100. A dice thrown at random. What is the probability of getting of 2?

a) 
$$\frac{1}{6}$$
 b)  $\frac{2}{6}$  c)  $\frac{3}{6}$  d)  $\frac{4}{6}$ 

Ans :C