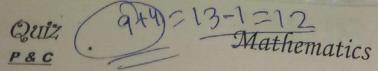
FIITJEE



Name: A abolition in the content in			Name: Aashish	. KZ ·	Batch: P	BTF 35 A02	Data blates
Number greater than 7000 and divisible by 5 that can be formed using only the digits 3, 5, 7, 8 and 9, no (A) 46 (B) 48 (C) 72 (B) 42 Number of different words that can be formed using all the leiters of the word "DEEPMALA", if two vowels (A) 960 (C) 2160 (D) 1440 (D) 1440 (E) 1440 (E) 17th the leiter of the word "QUEUE" are arranged in all possible manner as then are in a dictionary, then (A) 16th (B) 16th (A) 16th (B) 16th (E) 17th (D) 18th The number of different ways in which five 'allke dashes' and eight 'alike dots' can be arranged, using c (A) 1287 (B) 119 (E) 17th (D) 18th There are three coplanar parallel lines. If any p points are taken on each the lines, the maximum number (A) 30th (P) 1 + 1 (E) 30th (P) 1 Number of ways in which AAABBB can be placed in the squares of the figure as shown so that no row remains empty, is (A) 2430 (D) 1620 (D) 1620 (D) 1620 (D) 40 Multiple Correct Choice Type 9. Number of ways in which 200 people can be divided in 100 couples is (290)! (E) 101 (200)! (D) 201 (D) (200)! (D) 40 10. The number of ways in which 200 people can be divided in 100 couples is (290)! (E) 101 (100): 10. The number of ways of arranging the letters AAAAA, BBB, CCC, D, EE & F in a row if the letters C are separated from one another is sparated from one another is (B) 131 (131): (E) 1613(2) (E) 131 (E)							
Number greater than 7000 and divisible by 5 that can be formed using only the digits 3, 5, 7, 8 and 9, no (A) 46 (B) 48 (C) 72 (B) 42 Number of different words that can be formed using all the leiters of the word "DEEPMALA", if two vowels (A) 960 (C) 2160 (D) 1440 (D) 1440 (E) 1440 (E) 17th the leiter of the word "QUEUE" are arranged in all possible manner as then are in a dictionary, then (A) 16th (B) 16th (A) 16th (B) 16th (E) 17th (D) 18th The number of different ways in which five 'allke dashes' and eight 'alike dots' can be arranged, using c (A) 1287 (B) 119 (E) 17th (D) 18th There are three coplanar parallel lines. If any p points are taken on each the lines, the maximum number (A) 30th (P) 1 + 1 (E) 30th (P) 1 Number of ways in which AAABBB can be placed in the squares of the figure as shown so that no row remains empty, is (A) 2430 (D) 1620 (D) 1620 (D) 1620 (D) 40 Multiple Correct Choice Type 9. Number of ways in which 200 people can be divided in 100 couples is (290)! (E) 101 (200)! (D) 201 (D) (200)! (D) 40 10. The number of ways in which 200 people can be divided in 100 couples is (290)! (E) 101 (100): 10. The number of ways of arranging the letters AAAAA, BBB, CCC, D, EE & F in a row if the letters C are separated from one another is sparated from one another is (B) 131 (131): (E) 1613(2) (E) 131 (E)	2	47	A shopkeeper h can be selected	as 10 copies of each o	of nine different books, the	en number of ways in	Which atleast one to
Number of different words that can be formed using all the letters of the word "DEEPMALA", if two vowels together and the other two are also together but separated from the first two is (B) 1200 (C) 2160 (D) 1440 If all the letter of the word "QUEUE" are arranged in all possible manner as then are in a dictionary, then rank of the word QUEUE" are arranged in all possible manner as then are in a dictionary, then (B) 16" (D) 18th The number of different ways in which five 'alike dashes' and eight 'alike dots' can be arranged, using of the seven of these 'dashes' & 'dots' is (A) 1287 (B) 119 (C) 120 (D) 1235520 There are three coplanar parallel lines, if any p points are taken on each the lines, the maximum number (A) 3p'(p-1)+1 (B) 3p'(p-1) (C) p'(4p-3) (D) none of these (A) 3p'(p-1)+1 (B) 3p'(p-1) (C) p'(4p-3) (D) none of these (A) 3p'(p-1)+1 (B) 3p'(p-1) (D) p'(4p-3) (D) none of these (B) 2160 (B) 20 (C) 1620 (D) 40 Multiple Correct Choice Type 9. Number of ways in which 200 people can be divided in 100 couples is (B) 210 (D) 40 (D)				1-1-0	40111-1	(17) 409	
Number of different words that can be formed using all the letters of the word "DEEPMALA", if two vowels together and the other two are also together but separated from the first two is (B) 1200 (C) 2160 (D) 1440 If all the letter of the word "QUEUE" are arranged in all possible manner as then are in a dictionary, then rank of the word QUEUE" are arranged in all possible manner as then are in a dictionary, then (B) 16" (D) 18th The number of different ways in which five 'alike dashes' and eight 'alike dots' can be arranged, using of the seven of these 'dashes' & 'dots' is (A) 1287 (B) 119 (C) 120 (D) 1235520 There are three coplanar parallel lines, if any p points are taken on each the lines, the maximum number (A) 3p'(p-1)+1 (B) 3p'(p-1) (C) p'(4p-3) (D) none of these (A) 3p'(p-1)+1 (B) 3p'(p-1) (C) p'(4p-3) (D) none of these (A) 3p'(p-1)+1 (B) 3p'(p-1) (D) p'(4p-3) (D) none of these (B) 2160 (B) 20 (C) 1620 (D) 40 Multiple Correct Choice Type 9. Number of ways in which 200 people can be divided in 100 couples is (B) 210 (D) 40 (D)	X	3/	Number greater being repeated is	than 7000 and divisible	e by 5 that can be formed	using only the digits	3, 5, 7, 8 and 9, no dia
If all the letter of the word "QUEUE" are arranged in all possible manner as then are in a dictionary, then rank of the word QUEUE is (B) 15th (B)					(0) 12	. /D/L 40	
If all the letter of the word "QUEUE" are arranged in all possible manner as then are in a dictionary, then rank of the word QUEUE is (A) 15th (B) 16th (C) 15th (C) 15th (C) 15th (C) 15th (C) 15th (C) 15th (C) 120 (D) 1235520 The number of different ways in which five 'alike dashes' and eight 'alike dots' can be arranged, using of (A) 1287 (B) 119 (C) 120 (D) 1235520 There are three coplanar parallel lines. If any p points are taken on each the lines, the maximum number (A) 3p²(p-1)+1 (B) 3p²(p-1) (D) none of these (A) 3p²(p-1)+1 (B) 3p²(p-1) (D) none of these (A) 2430 (D) 1620 (-			(-) .200	(C) 2160	60	
5. The number of different ways in which five 'alike dashes' and eight 'alike dots' can be arranged, using of these 'dashes' & dots' is (A) 1287 (B) 119 (C) 120 (D) 1235520 (D) 1235520 (D) 1235520 (E) 129 (D) 1235520 (D) 1235520 (E) 129 (D) 1235520 (D) 1235520 (E) 129 (D) 1235520 (D) 123520 (D) 123522 (D)	Ky.	M	If all the letter of the rank of the word (A) 15 th	the word "QUEUE" are QUEUE is (B) 16 th	e arranged in all possible	manner as then are	in a dictionary, then th
There are three coplanar parallel lines. If any p points are taken on each the lines, the maximum number (A) 3p²(p-1) + 1 (B)³3p²(p-1) (D) none of these Number of ways in which AAABBB can be placed in the squares of the (A) 2430 (D) 1620 (B) 2160 (D) 40 8. Number of ways in which 6 different toys can be distributed among two brothers in ratio 1 : 2, is (D) 40 Multiple Correct Choice Type 9. Number of ways in which 200 people can be divided in 100 couples is (200)! (200)		5			1011/"	(D) +-th	
There are three coplanar parallel lines. If any p points are taken on each the lines, the maximum number (A) 3p²(p-1) + 1 (B)³3p²(p-1) (D) none of these Number of ways in which AAABBB can be placed in the squares of the (A) 2430 (D) 1620 (B) 2160 (D) 40 8. Number of ways in which 6 different toys can be distributed among two brothers in ratio 1 : 2, is (D) 40 Multiple Correct Choice Type 9. Number of ways in which 200 people can be divided in 100 couples is (200)! (200)			seven of these 'da (A) 1287	shes' & 'dots' is	five 'alike dashes' and ei	ght 'alike dots' can b	oe arranged, using only
7. Number of ways in which AAABBB can be placed in the squares of the figure as shown so that no row remains empty, is (A) 2430 (C) 1620 (B) 2160 (D) 1620 (E) 1620 (E) 1620 (D) 1620 (E) 1620		√ 6			A (US) 72()	/D) 100	
7. Number of ways in which AAABBB can be placed in the squares of the figure as shown so that no row remains empty, is (A) 2430 (C) 1620 (B) 2160 (D) 1620 (E) 1620 (E) 1620 (D) 1620 (E) 1620	1	~	triangles with vertice (A) $3p^2(p-1)+1$	ces at these points is	If any p points are taken	on each the lines, th	e maximum number of
(B) 2160 (B) 2160 (C) 1620 (B) 60 (C) 20 (D) 40 Multiple Correct Choice Type 9. Number of ways in which 200 people can be divided in 100 couples is (200)! (200)! (D) (200)! (D) (200)! (D) (100)! 10. The number of ways of arranging the letters AAAAA, BBB, CCC, D, EE & F in a row if the letters C are separated from one another is (A) 13 (21) (10) (10) (10) (10) (10) (10) (10) (1		7.	. Number of ways in	Which AAADDD	(4p - 3)	(D)	
Number of ways in which 6 different toys can be distributed among two brothers in ratio 1:2, is Multiple Correct Choice Type 9. Number of ways in which 200 people can be divided in 100 couples is (200)! (D) (200)! (D) (200)! (D) (200)! (D) (100)! 10. The number of ways of arranging the letters AAAAA, BBB, CCC, D, EE & F in a row if the letters C are separated from one another is (A) 13 C 12! (B) 13! (B) 13! (B) 13! (B) 13! (C) A is The maximum number of points of intersection of 8 circles of unequal radii is 56 R: The maximum number of points into which 4 circles of unequal radii and 4 non coincident straight lines intersect, is 50. (A) A and R true and R is the correct explanation of A. (C) A is true and R is false.			(A) 2430	that no row remains	ciripty, is	of the	
Multiple Correct Choice Type 9. Number of ways in which 200 people can be divided in 100 couples is (200)! (200)! (D) (200)! (D) (200)! 10. The number of ways of arranging the letters AAAAA, BBB, CCC, D, EE & F in a row if the letters C are separated from one another is (A) 13C 12! (B) 13! (B) 13! (B) 13! Assertion Reason Type 1. A: The maximum number of points of intersection of 8 circles of unequal radii is 56 R: The maximum number of points into which 4 circles of unequal radii and 4 non coincident straight lines intersect, is 50. (A) A and R true and R is the correct explanation of A. (C) A is true and R is the incorrect explanation of A. (C) A is true and R is false.			· (C) 1620				
9. Number of ways in which 200 people can be divided in 100 couples is (200)! (200)! (D) (200)! (D) (200)! 10. The number of ways of arranging the letters AAAAA, BBB, CCC, D, EE & F in a row if the letters C are separated from one another is (A) (B) (12!) (B) (13!) (C) (13!) (D) (15!) (1	7	8.	Number of ways in (A) 30	which 6 different toys (B) 60	can be distributed among • (C) 20	two brothers in ratio	1:2, is
(A) 13 (2) (101) (102) (200) (100)! 10. The number of ways of arranging the letters AAAAA, BBB, CCC, D, EE & F in a row if the letters C are separated from one another is (A) 13 (2) 12! (B) 13! (B) 13! (B) 15! (3!) ² 2! - 13! - 12! 15 (2) 15! (3!) ² 2! - 13! - 12! 15 (2) 15! (3!) ² 2! - 13! - 12! 15 (2) (3!) ² 2! - 13! - 12! 15 (3!) ² 2! - 13! 15! 15! 15! 15! 15! 15! 15! 15! 15! 15		M	ultiple Correct Cho	ice Type		(2) 40	
10. The number of ways of arranging the letters AAAAA, BBB, CCC, D, EE & F in a row if the letters C are separated from one another is (A) \(\frac{13C}{3} \) \(\frac{12!}{5!3!2!} \) (B) \(\frac{13!}{5!3!3!2!} \) (E) \(\frac{14!}{3!3!2!} \) (D) \(\frac{15!}{3!3!2!} \) \(\frac{15!}{5!(3!)^2 2!} \) \(\frac{13!}{5!3!2!} \) \(\frac{12!}{5!3!2!} \) \(\frac{13!}{5!3!2!} \) \(\frac{13!}{5!3	4	9.	Number of ways in	which 200 people car	be divided in 100 couples	sis	
10. The number of ways of arranging the letters AAAAA, BBB, CCC, D, EE & F in a row if the letters C are separated from one another is (A) \(\frac{13}{5} \) \(\frac{12!}{5!3!2!} \) (B) \(\frac{13!}{5!3!3!2!} \) (B) \(\frac{13!}{5!3!3!2!} \) (B) \(\frac{14!}{3!312!} \) (B) \(\frac{15!}{3!3!2!} \) (B) \(\frac{15!}{5!3!2!} \) (B) \(\frac{15!}{5!3!2!} \) (C) A is true and R is the incorrect explanation of A. (C) A is true and R is false.			(A) 200 (100):		JBY 1, 3, 5, 199		
(A) 13 C 5 51312! (B) 13! 5131312! (C) 14! 31312! (D) 15! 13! 12! 13 C 2 Assertion Reason Type 1 1. A: The maximum number of points of intersection of 8 circles of unequal radii is 56 R: The maximum number of points into which 4 circles of unequal radii and 4 non coincident straight lines intersect, is 50. (A) A and R true and R is the correct explanation of A. (B) A and R true and R is the incorrect explanation of A. (C) A is true and R is false.			(2) (101) (102) (102) (102)	$\left(\frac{200}{2}\right)$	(D) $\frac{(200)!}{(100)!}$		
1 1. A: The maximum number of points of intersection of 8 circles of unequal radii is 56 R: The maximum number of points into which 4 circles of unequal radii and 4 non coincident straight lines intersect, is 50. (A) A and R true and R is the correct explanation of A. (C) A is true and R is false.		10.	The state of the office	another 15			
1 1. A: The maximum number of points of intersection of 8 circles of unequal radii is 56 R: The maximum number of points into which 4 circles of unequal radii and 4 non coincident straight lines intersect, is 50. (A) A and R true and R is the correct explanation of A. (B) A and R true and R is the incorrect explanation of A. (C) A is true and R is false.			(A) ¹³ C ₅ 12! 51312!	(B) 13! 5!3!3!2!	4e) 14! 3 3 2	$\frac{15!}{5!(3!)^2 2!} - \frac{1}{5!3}$	$\frac{3!}{!2!} - \frac{12!}{5!3!} ^{13}C_2$
R: The maximum number of points into which 4 circles of unequal radii and 4 non coincident straight lines intersect, is 50. (A) A and R true and R is the correct explanation of A. (C) A is true and R is false.		As	sertion Reason Ty	pe			
A and R true and R is the incorrect explanation of A. (C) A is true and R is false.		11	R: The maximum r intersect, is 50.	umber of points into	which 4 circles of unequal	qual radii is 56 radii and 4 non coind	cident straight lines
" (b) A is take and K is true.			VB) A and R true and	d R is the incorrect exp s false.	olanation of A.		

12. A: If there are six letters L₁, L₂, L₃, L₄, L₅, L₆ and their correspondingly addressed six envelopes E₁, E₂, E₃, E₄, E₅, E₆. Letters having odd value can be put into odd values envelopes and even value letters can be put into even value envelopes, so that no letter goes into its right envelope, the number of arrangement will be

R: If P_n number of ways in which n letters can be put in 'n' correspondingly addressed envelopes such that no

letter goes its correct envelope than $P_n = n! \left(1 - \frac{1}{1!} + \frac{1}{2!} + ... + \frac{(-1)^n}{n!}\right)$

(A) A and R true and R is the correct explanation of A. (B) A and R true and R is the incorrect explanation of A.

- (C) A is true and R is false.
- (D) A is false and R is true.

13. A: The maximum value of k such that (50)k divides 100! Is 24.

R: If P is any prime number, then power of P in n! is equal to $\left\lceil \frac{n}{P} \right\rceil + \left\lceil \frac{n}{P^2} \right\rceil + \left\lceil \frac{n}{P^3} \right\rceil ...$

(A) A and R true and R is the correct explanation of A.

- (B) A and R true and R is the incorrect explanation of A.
- (C) A is true and R is false.
- (D) A is false and R is true.

Comprehension Type: I

Consider the letters of the word MATHEMATICS. There are eleven letters some of them are identical. Letters are classified as repeating and non-repeating letters. Set of repeating letters = {M, A, T}. Set of non-repeating letters $= \{H, E, I, C, S\}.$

14. Possible number of words taking all letters at a time such that atleast one repeating letter is at odd position in NOT POSSIBLE

(A)
$$\frac{9!}{2!2!2!}$$

$$\frac{11!}{2!2!2!} \qquad (C) \frac{11!}{2!2!2!} - \frac{9!}{2!2!} \qquad (D) \frac{9!}{2!2!}$$

(D)
$$\frac{9!}{2!2!}$$

15. Possible number of words taking all letters at a time such that in each word both M's are together and both T's are together but both A's are not together, is

(B)
$$\frac{11!}{2!2!2!} - \frac{10!}{2!2!}$$

(C)
$$\frac{6!4!}{2!2!}$$

(D)
$$\frac{9!}{2!2!2!}$$

16. Possible number of words in which no two vowels are together, is

The possible number of words in which the transfer of
$$\frac{7!}{2!2!}$$
. 8C_4 . $\frac{4!}{2!}$ (C) $7!$. 8C_4 . $\frac{4!}{2!}$ (D) $\frac{7!}{2!2!2!}$. 8C_4 . $\frac{4!}{2!}$

(B)
$$\frac{7!}{2!}$$
. ${}^{8}C_{4}$. $\frac{4!}{2!}$

(C)
$$7!.^{8}C_{4}.\frac{4!}{2!}$$

(D)
$$\frac{7!}{2!2!2!}$$
.8C₄. $\frac{4!}{2!}$

Comprehension Type: II

Let Set S = {1, 2, 3, ..., n} be a set of first n natural numbers and A ⊆ S. Suppose n(A) represents cardinal number of the set A and min(A) represents least number among the elements of set A.

17. The greatest value of min(A), where $A \subseteq S$ and n(A) = r, $1 \le r \le n$; is (A) r (B) (n-r) (C) n = r + 1

(B)
$$(n - r)$$

18. The number of subsets A of S for which n(A) = r and min(A) = k, is (A) $n.^{n-k}C_{r-1}$ (B) ${}^nC_{r-1}$ (C) ${}^{n-k+1}C_{r-1}$

19. If n(A) = r (fixed constant), min(A) = k (fixed constant), then $\sum min(A)$ is

(B)
$$(n+1)^{n-K}C_{r-1}-r^{n-K+1}C_r$$

(C)
$$K^{n-K}C_{r-1} + {}^{n,n-K+1}C_1$$

Matrix - Match Type

20. Match the following.

Column - I			Column - II	
(A)	The total number of selections of atleast one of the fruits which can be made from 3 bananas, 4 apples and 2 oranges is	(p)	Greater than 50 🕨	
(B)	If 7 points out of 12 are in the same straight line, then the	(q)	Greater than 100	
(C)	The number of ways of selecting 10 balls from unlimited number of red, black, white and green balls is	(r)	Greater than 150	
(D)	The total number of proper divisors of 38808 is	(s)	Greater than 200 &	
		(t)	Greater than 300	

21. Consider the word "HONOLULU".

	Column – I		Column – II
(A)	Number of words that can be formed using the letters of the given word in which consonants & vowels are alternate is	(p)	26
(B)	Number of words that can be formed without changing the order of vowels is	(q)	288
(C)	Number of ways in which 4 letters can be selected form the letters of the given word is	(r)	840
(D)	Number of words in which two O's are together but U's are separated is	(s)	900
		(t)	144