Mathematics ECAT Pre Engineering Chapter 9 Permutation, Combination and Probability Online Test

Sr	Questions	Answers Choice
1	A sequence is a function whose domain is	A. N B. Subset of N C. R D. None of these
2	The domain of a finite sequence is a	A. Set of natural numbers B. R C. Subset of N D. Proper subset of N
3	The domain of an infinite sequence is a	A. Set of natural numbers B. R C. Subset of N D. None of the above
4	The sum if 1,3,5,7,9..... up to 20 terms is	A. 400 B. 472 C. 563 D. 264
5	The sum of all odd numbers between 100 and 200 is	A. 6200 B. 7500 C. 6500 D. 3750
6	The sum of all positive integral multiple of 5 less than 100 is	A. 950 B. 760 C. 1230 D. 875
7	The sum of all even numbers less than 100 is	A. 2450 B. 2352 C. 2272 D. 2468
8	Arithmetic mean between 14 and 18 is	A. 16 B. 17 C. 15 D. 32
9	How many terms of the A.P 3,6,9,12,15.....must be taken to make the sum 108	A. 8 B. 6 C. 7 D. 36
10	An event having more than one sample point is called	A. Certain event B. Compound event C. Simple event D. None
11	If A and B are two disjoint events then	A. P(A∪B)=P(A)+P(B) B. P(A∪B)=P(A)-P(A∪B) C. P(A∪B)=P(A)or P(B) D. None
12	nCn-r is equal to	A. n! B. n-1Cr C. nCr D. None of these
13	The number of combinations of 10 different objects taken 8 objects at a time is	A. 90 B. 45 C. 55 D. 50
14	If S is a sample space and event set E = S then P(E) is	A. >0 B. 1 C. <1 D. 0
15	If S is a sample space and event set E =Φ then P(E) is	A. >0 B. 1 C. <1

		D. 0
16	The probability that a slip of numbers divisible by 4 is picked from the slips of number 1,2,3,4,.....10 is	A. 1/5 B. 2/5 C. 1/10 D. 3/10
17	Product of any n consecutive positive integers is divisible by	A. n B. √n C. n! D. None
18	probability of a certain event is	A. 0 B. -1 C. 1 D. ∞
19	If A is an event then which of the following is true	A. P(A)<0 B. 0≥P(A)≤1 C. P(A)>0 D. None
20	The number of permutation that can be formed from the letters of the word OBJECT is	A. 700 B. 600 C. 720 D. 620
21	A box contains 10 red 30 white and 20 black marbles When a marble is drawn at random the probability that it is either red or white is	A. 1/6 B. 1/3 C. 1/2 D. 2/3
22	The number of 5-digit number that can be formed from the digits 1,2,4,6,8, when 2 and 8 are never together is	A. 72 B. 48 C. 144 D. 20
23	Number of selections of n different things out of n	A. 1 B. nPr C. n! D. nPr
24	If for two events A and B , P(A∪B)=1,then events A and B are	A. Certain events B. Mutually exclusive C. Complementary events D. Independent
25	How many different 5-digit even numbers are possible form digit 1,2,4,6,8	A. 4 : 4! B. 4! C. 5! D. 4!+4!
26	The factorial of a positive integers is a (an)	A. Rational number B. Positive integer C. Real number D. None
27	A key ring is an example of	A. Permutation B. Circular permutation C. Combination D. None
28	Probability of an impossible event is	A. 0 B. -1 C. 1 D. ∞
29	How many 6-Digit number can be formed without repairing any digit from the digits 0,1,2,3,4,5	A. 720 B. 600 C. 120 D. 6-5!
30	How many comittees of 5 numbers can be chosen from a group of 8 players person when each committee must include 2 particular persons	A. 8! B. 5!3! C. 5! D. 20
31	Number of combination of zero or more things out of n different things	A. nPn B. nPr C. nCr D. 2n
32	Which one is not defined ∀n∈Z+	A. -n! B. n! C. (-n)! D. n!+0!=n!+1
	In school there are 150 students Out of these 80 students enrolled for mathematics class 50 enrolled for English class and 60 enrolled for Physics class The student enrolled for	A. 40

33	50 enrolled for English class and 60 enrolled for Physics class The student enrolled for English cannot attend any other class but the students of mathematics and Physics can take two courses at a time Find the number of students who have taken both physics and mathematics.	B. 30 C. 50 D. 20
34	In a school there are 150 students Out of these 80 students enrolled for mathematics class.50 enrolled for English class and 60 enrolled for Physics class The student enrolled for English cannot attend any other class but the students of mathematics and Physics can take two courses at a time find the number of students who have taken both physics and mathematics.	A. 40 B. 30 C. 50 D. 60
35	In a country 55% of the male population has houses in cities while 30% have houses both in cities and in villages find the percentage of the population that has houses only in villages	A. 45 B. 30 C. 25 D. 50
36	If n is a positive integer then n! is	A. (n - 1) (n - 2) .....3,.2.1 B. n(n - 1) (n - 2) ...3.2.1 C. n(n - 1) (n -2) ... 3 D. None of these
37	For a positive integer n	A. n! = n(n + 1) B. n! = n(n+1)! C. n! = n(n - 1) D. n! = n(n - 1)!
38	0! = _____	A. 0 B. 1 C. 2 D. Not defined
39	Question Image	A. 8 B. 1/56 C. 56 D. None of these
40	8 . 7 . 6. 5 in factorial form is	
41	6! = _____	A. 360 B. 720 C. 6.5.4 D. None of these
42	Question Image	A. 56 B. 7 C. 8 D. 8/7
43	n(n - 1) (n - 2) in factorial form is	
44	(n + 2) (n + 1)n in factorial form is	
45	Question Image	A. 3 B. 6 C. 0 D. None of these
46	Question Image	
47	Question Image	A. n! B. 0! C. 1 D. None of these
48	Question Image	A. 0 B. 20 C. 90 D. 80
49	Question Image	A. 6 B. 360 C. 120 D. 24
50	n different objects can be arranged taken all at a time in _____	A. (n + 1)! ways B. (n - 1)! ways C. n! ways D. n ways
51	Question Image	A. 120 B. 5 C. 4 D. 6
52	Number of ways of writing the letters of WORD taken all at a time is	A. 24 B. 4 C. 12 D. 6

53	How many arrangements of the letters of the word MI SSI PPI, taken all together can be made?	
54	In how many ways can 5 persons be seated at a round table	A. 5! B. 4! C. 3! D. 120
55	How many signals can be given by 5 flags of different colours, using 3 flags at a time	A. 120 B. 60 C. 24 D. 15
56	How many 3 digit numbers can be formed by using each one of the digit 2, 3, 5, 7, 9 only once?	A. 15 B. 24 C. 60 D. 120
57	How many necklaces can be made from 6 beads of different colours?	A. 120 B. 60 C. 24 D. 15
58	When a selection of object is made without paying regard to the order of selection, it is called	A. Sequence B. Series C. Combination D. Permutation
59	The number of permutations of n objects of which there are $n_1$like of one kind, $n_2$like of the second kind and $n_3$like objects of third kind are	
60	Question Image	
61	The number of the diagonals of a 6 sided figure is	A. 15 B. 21 C. 9 D. 6
62	Question Image	
63	Question Image	A. 110 B. 220 C. 1320 D. None of these
64	Question Image	A. 5 B. 20 C. 9 D. 4
65	The sample space for tossing a coin once is	A. {T, T} B. {H, H} C. {H, T} D. None of these
66	The probability to get an odd number in a dice thrown once is	A. 6 B. 1 C. 1/6 D. 1/2
67	A dice is rolled. The probability that the dots on the top are greater than 4 is	A. 1/6 B. 1/3 C. 1/2 D. 1
68	The probability that a slip of number divisible by 4 is picked from the slips bearing numbers 1, 2, 3, ...10 is	A. 1/5 B. 1/4 C. 1/3 D. 1/2
69	Question Image	A. P(A) + P(B) B. P(A) - P(B) C. P(A) . P(B) D. P(A) / P(B)
70	The sample space for tossing a coin twice is	A. {H, T} B. {HH, HT, TH, TT} C. {H, T, HH} D. {HH, HT, TT}
71	The probability that a person A will be alive 15 years hence is 5/7 and the probability that another person B will be alive 15 years hence is 7/9. Find the probability that both will be alive 15 years hence	A. 4/63 B. 5/9 C. 45/49 D. None of these
72	Question Image	A. 0 B. -1

		C. 1 D. 2
73	If n is a negative integer n! is	A. 1 B. 0 C. Unique D. Not defined
74	9. 8. 7. 6= _____	
75	(n + 2) (n + 1) n= _____	
76	Question Image	
77	Question Image	
78	n(n - 1) (n - 2) .... (n - r + 1) = _____	
79	Question Image	
80	20. 19. 18. 17= _____	
81	Question Image	A. 36 B. 360 C. 24 D. 6
82	The number of words that can be formed out of the letters of the word ASSASSINATION is	
83	How many arrangements of the letters of the word MATHEMATICS can be made	
84	How many arrangements of the letters of the word PAKISTAN cab be made	
85	How many arrangements of the letter of the word PAKPATTAN can be made	
86	How many arrangements of the letters of the word ADDING can be made	
87	The probability to get an odd number in a dice thrown once is	A. 1/2 B. 1/6 C. 1/3 D. 2
88	Question Image	
89	Question Image	
90	Question Image	A. 5 B. 10 C. 20 D. 30
91	Question Image	
92	Question Image	
93	Two balanced dice are tossed once, the sample space when the integers on the faces of two dice are the same is	A. {(1, 1), (2, 2), (3, 3)} B. {(4, 4), (5, 5), (6, 6)} C. {(1, 1), (2, 2), (3, 3), (4, 4), (5, 5), (6, 6)} D. None of these
94	Three unbiased coins are tossed. Then the probabilities of getting two heads is	A. 3/8 B. 1/8 C. 1/4 D. None of these
95	An unbiased die is thrown. Then the probability of getting a prime is	A. 1/2 B. 2/3 C. 3/4 D. None of these
96	A coin is tossed. If head comes up, a die is thrown but if tail comes up, the coin is tossed again. The probability of obtaining a head and an even number is	A. 1/8 B. 2/8 C. 3/8 D. None of these
97	A card is drawn from a pack of cards numbered 1 to 52, the probability that the number on the card is a perfect square is	A. 1/13 B. 2/13 C. 7/52 D. None of these
98	A bag contains 3 white, 4 black and 2 red balls. If 2 balls are drawn at random, then the probability that both the ball are white is	A. 1/18 B. 1/12 C. 1/36 D. None of these

99	Form a group of 5 men and 3 women, a committee of 4 persons is to be selected randomly. The probability that there is a majority of men is	A. 1/4 B. 1/3 C. 1/2 D. 1/6
100	Six boys and 3 girls are to be seated at random, in a row, for a photograph. The probability that no two girls will sit together is	A. 1/12 B. 1/6 C. 5/12 D. 7/12
101	Four cards are drawn at random from a pack of 52 playing cards. The probability of getting all the four cars of the same suit is	A. 44/4165 B. 22/4165 C. 11/4165 D. None of these
102	5 unbiased coins coins are tossed simultaneously. The probability of getting at least one head is	A. 1 / 32 B. 31 / 32 C. 1 / 16 D. None of these
103	Two unbiased dice are thrown. The probability that the total score is > 5 is	A. 1 / 18 B. 7 / 18 C. 13 / 18 D. 11 / 18
104	Two cards are drawn at random from a well shuffled pack of cards. The probability that at least one of them is a face card is	A. 3 / 17 B. 5 / 17 C. 7 / 17 D. 9 / 17
105	Three dice are thrown together. The probability of getting a total of at least 6 is	A. 103 / 108 B. 10 / 216 C. 93 / 108 D. None of these
106	There are 25 tickets bearing number from 1 to 25. One ticket is drawn at random. The probability that the number on it is a multiple of 5 or 6 is	A. 7 / 25 B. 9 / 25 C. 11 / 25 D. None of these
107	In a class of 100 students, 60 drink tea, 50 drink coffee and 30 drink both. A student from his class is selected at takes at last one of 2 drinks is	A. 2 / 5 B. 3 / 5 C. 4 / 5 D. None of these
108	The value of n, when ${}^{n}P_2 = 20$ is	A. 3 B. 4 C. 6 D. 5
109	Riaz, Saba. Maria, Shehzad are to give speeches in a class. The teacher can arrange the order of their presentation in	A. 4 ways B. 12 ways C. 256 ways D. 24 ways
110	If $4\ {}^{6}P_r = {}^{6}P_{r+1}$, then r is equal to	A. 4 B. 3 C. 2 D. 1
111	All letters of the word "AGAIN" are permuted in all possible ways and the words so formed (with or without meaning) are written as in dictionary, then the 50th word is	A. NAAGI B. NAAIG C. IAANG D. INAGA
112	The number of significant numbers which can be formed by using any number of the digits 0, 1, 2, 3, 4 but using each not more than once in each number is	A. 260 B. 356 C. 410 D. 96
113	Number of permutations of n distinct objects taken r(<n - 3) at a time which exclude 3(<n) particular objects is	A. 3! P(n, r - 3) B. P(n, 3) P(n, r - 3) C. P(r, r)P(n, r - 3) D. P(n - 3, r)
114	The number of ways of arranging the letter AAAAA BBB CCC D EE F in a row when no two C's are together is	
115	Fifteen girls compete in a race. The first three places can be taken by them in	A. 3! ways B. 12! ways C. 15 x 14 x 13 ways D. 42 ways
116	There are n seats round a table numbered 1, 2, 3 .... n. The number of ways in which m person can take seats is	A. ⁿP_m B. ⁿC_mx (m - 1) ! C. ⁿ⁻¹P_m D. None of these

117	Eight chairs are numbered 1 to 8. Two women and three men wish to occupy one chair each. First, the women choose the chairs from amongst the chairs marked 1 to 4 and then the men select the chairs from amongst the remaining. The number of possible arrangement is	A. ⁶C₃x ⁴C₂ B. ⁴C₂x ⁴P₃ C. ⁴P₂x ⁶P₃ D. None of these
118	An integer is chosen at random from the number ranging from 1 to 50. the probability that the integer chosen is a multiple of 2 or 3 or 10 is	A. 3 / 10 B. 5 / 10 C. 7 / 10 D. 9 / 10
119	Question Image	A. 0.9 B. 0.74 C. 0.2016 D. None of these
120	Question Image	A. 1.5 B. 1.2 C. 8 D. None of these
121	Question Image	
122	Question Image	A. 1 / 2 B. 1 / 3 C. 1 / 4 D. None of these
123	A bag contains 7 whit, 5 black and 4 rd balls. If two balls are drawn at random from the bag, the probability that they are not of the same color is	A. 73 / 120 B. 83 / 120 C. 67 / 120 D. 43 / 120
124	Two cards are drawn at random without replacement. the probability that the first is a king and second is not a king is	A. 48 / 663 B. 24 / 663 C. 12 / 663 D. None of these
125	A bag contains 5 white, 7 red and 5 black balls. If four balls are drawn one by one with replacement, the probability that none is white is	A. (11/16)² B. (5/16)² C. (11/16)⁴ D. (5/16)⁴
126	A committee consists of 9 experts taken from three institutions A, B, and C, of which 2 are from, A, 3 form B and 4 from C. If three experts resign, then the probability that they belong to different institutions is	A. 1 / 729 B. 1 / 24 C. 1 / 21 D. 2 / 7
127	Three numbers are chosen random without replacement from {1, 2, 3, ..., 10}. the probability that minimum of the chosen numbering is 3 or their maximum is 7	A. 7 / 40 B. 5 / 40 C. 11 / 40 D. None of these
128	Out of 40 consecutive natural numbers, two are chosen at random. Probability that the sum of the numbers is odd, is	A. 14 / 29 B. 20 / 39 C. 1 / 2 D. n
129	The probability of getting a number between 1 and 100 which is divisible by 1 and itself if only is	A. 1 / 4 B. 1 / 2 C. 3 / 4 D. 25 / 98
130	If two balls are drawn from a bag containing 3 white, 4 black and 5 red balls. Then the probability that the drawn balls are of different colours is	A. 1 / 66 B. 3 / 66 C. 19 / 66 D. 47 / 66
131	Five engineering, four mathematics, two chemistry books are placed on a table at random.The probability that the books of each kind are all together is	
132	The key for opening a door is in a bunch of 10 keys. A man attempts to open the door by trying the keys at random discarding the wrong key. The probability that the door is opened in the 5th trial is	A. 1 / 10 B. 2 / 10 C. 3 / 10 D. 4 / 10
133	A machine operates if all of its three components function. The probability that the first component fails during the year is 0.14, the second component fails is 0.10 and the third component fails is 0.05. the probability that the machine will fail during the year is	A. 0.2647 B. 0.2692 C. 0.3647 D. None of these
134	A combination lock on a suitcase has 3 wheels each labeled with nine digits from 1 to 9. If an opening combination is a particular sequence of three digits with no repeats, the probability of a person guessing the right combination is	A. 1 / 500 B. 1 / 504 C. 1 / 252 D. 1 / 250

135	Out of 10, 000 families with 4 children each, the number of families all of whose children are daughters is	A. 375 B. 500 C. 625 D. 150
136	A card is drawn from a pack of cards numbered 2 to 53. the probability that the number on the card is prime number less than 20 is	A. 2 / 13 B. 4 / 13 C. 5 / 13 D. 8 / 13
137	An experiment yields 3 mutually exclusive and exhaustive events A, B, C, if P(A) =2 and P(B) = 3. then P(C) =	A. 1 / 11 B. 2 / 11 C. 3 / 11 D. 6 / 11
138	A box containing 10 mangoes out of which 4 are rotter. Two mangoes are taken together from the box. If one of them is found to be good, the probability that the other is also good is	A. 1 / 3 B. 8 / 15 C. 5 / 13 D. 5 / 9
139	For two events A and B if P(A) = P (A/B) = 1/4 and P(B/A) = 1/2, then	A. A is sub-event of B B. A and B are mutually exclusive C. A and B are independent and P(A/B) = 3/4 D. None of these
140	Given two independent event A and B such that P(A) = 0.30 and P(B) = 0.60. Probability of getting neither A nor B is	A. 0.28 B. 0.13 C. 0.12 D. 0.42
141	A and B throw a dice. The probability that A's throw is not greater then B's is	A. 5 / 12 B. 7 / 12 C. 1 / 6 D. 1 / 2
142	A die is thrown 100 times. If getting an odd number is considered a success, the variance of the number of successes is	A. 50 B. 25 C. 10 D. 100
143	Question Image	A. 5 / 12 B. 3 / 8 C. 5 / 8 D. 7 / 4
144	Three integers are chosen at random from the first 20 integers. Then probability that their product is even, is	A. 2 / 19 B. 3 / 29 C. 17 / 19 D. 4 / 19
145	Cycle tyres are supplied in lots of 10 and there is a chance if 1 in 500 tyres to be defective. Using Poisson distribution, the approximate number of lots containing no defective tyre in a consignment of 10, 0000 lots is	A. 9028 B. 9208 C. 9802 D. 9820
146	There are 16 point in a plane, in which 6 are collinear. how many lines can be drawn by joining these points?	A. 10 B. 66 C. 71 D. 106
147	What is the probability of being born on Wednesday?	A. 1/7 B. 1/2 C. 1/3 D. 1/8
148	A class contains nine boys and three girls, in how many ways can the teacher choose a committee of four?	A. 60 B. 460 C. 495 D. 272
149	A die is rolled. What is the probability that the dots on the top are greater than 4?	A. 1/4 B. 1/2 C. 1/3 D. 1/33
150	A die is thrown, the probability that the dots on the top are prime numbers or odd numbers is	A. 1/2 B. 2/3 C. 1/3 D. 2/5
151	The probability that the sum of dots appearing in two successive thrown of two dice, in every time 7 is	A. 1/5 B. 1/36 C. 1/7 D. 1/63
152	Two coins are tossed twice each. The probability that the head appears on the first toss and the same forces appear in the two tosses is	A. 1/4 B. 1/2 C. 1/3

	and the same forces appear in the two tosses is	C. 1/3 D. 1/7
153	n!/(n-1)!=	A. n B. n! C. (n-1)! D. 0!