



MATHS

BOOKS - MTG WBJEE MATHS (HINGLISH)

STATISTICS AND PROBABILITY

Wb Jee Workout Category 1 Single Option Correct Type 1 Mark **1.** If A and B are two independent events, the probability that both A and B occurs is $\frac{1}{12}$ and probability that neither A nor B occurs is $\frac{1}{2}$ then

A.
$$P(A) = 1/3, P(B) = 1/4$$

B.
$$P(A) = 1/2, P(B) = 1/6$$

C.
$$P(A) = 1/6, P(B) = 1/2$$

D.
$$P(A) = 1/4, P(B) = 1/2$$

Answer: A





2. Two squares are choosen from a chess board. The probability that they are of different colour is

A.
$$\frac{63}{64}$$

B. $\frac{32}{63}$
C. $\frac{23}{64}$

D. None of these

Answer: B



3. For two data sets, each of size 5, the variances are given to be 4 and 5 and the corresponding means are given to be 2 and 4, respectively. The variance of the combined data set is (1) $\frac{11}{2}$ (2) 2 (3) $\frac{13}{2}$ (4) $\frac{5}{2}$ A. $\frac{11}{2}$

B. 6

C.
$$\frac{13}{2}$$

D. $\frac{5}{2}$

Answer: A



4. The probability that Ram will be alive 30 years hence is $\frac{7}{11}$ and Shyam will be alive is $\frac{7}{10}$. What is the probability that both Ram and Shyam will be dead 30 years hence ?

A.
$$\frac{1}{11}$$

B. $\frac{12}{110}$
C. $\frac{12}{121}$

D. None of these

Answer: C

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5. Two cards are drawn from a deck of cards.The probability that both are of same suit is

A.
$$\frac{1}{2}$$

B. $\frac{1}{13}$
C. $\frac{4}{17}$

D. None of these

Answer: C

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6. The mean age of a combined group of men and women is 25 years. If the mean age of the group of men is 26 and that of the group of women is 21, then the percentage of men and women respectively in the group is

A. 46, 60

B. 80, 20

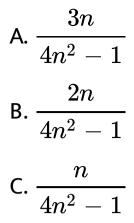
C. 20, 80

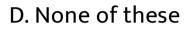
D. 60, 40

Answer: B

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7. Out of (2n+1) tickets consecutively numbered, three are drawn at random. Find the chance that the numbers on them are in





Answer: A



8. A and B are two independent events such that $P(A \cup B') = 0.8$ and P(A) = 0.3. Then P(B) is

A. 2/7

B. 2/3

C.3/8

D. 1/8

Answer: A

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9. The mean deviation about the mean for the

values

18, 20, 12, 14, 19, 22, 26, 16, 19, 24 is

A. 3.1

B. 3.4

C. 3.2

D. 3.3

Answer: C

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10. A drawer contains 4 green and 5 white socks well mixed. A man after reaching the

drawer pulls 2 socks at random . The probability that they are of same colour is

A.
$$\frac{5}{7}$$

B. $\frac{7}{15}$
C. $\frac{5}{9}$
D. $\frac{4}{9}$

Answer: D

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11. A mapping is selected at random from set $A = \{1, 2, ..., 10\}$ into itself. The probability that mapping selected is an injective is

A.
$$\frac{10}{10^9}$$

B. $\frac{9!}{10^9}$
C. $\frac{9}{10!}$

D. None of these

Answer: B



12. Three numbers are chosen at random from1 to 15. The probability that they areconsecutive is

A.
$$\frac{1}{190}$$

B. $\frac{1}{120}$
C. $\frac{1}{35}$
D. $\frac{5}{75}$

Answer: C



13. A coin is tossed n times. The probability that head will turn up an even number of times is

A.
$$rac{n+1}{2n}$$

B. $rac{n}{n+1}$
C. $rac{1}{2}$
D. 2^{n-1}

Answer: C



14. The mean of a binomial distribution is 15 and standard deviation is 5, then which one of the following is correct ?

A.
$$p=rac{2}{3}$$

B. $q=rac{5}{3}$

C. data's are absolutely correct

D. data's are absolutely wrong

Answer: D

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15. The probability that in a random arrangement of the letter of the word "FAVOURABLE" the two 'A' do not come together is

A.
$$\frac{1}{5}$$

B. $\frac{1}{10}$
C. $\frac{9}{10}$
D. $\frac{4}{5}$

Answer: D



16. The standard deviation of 25 numbers is 40. If each of the numbers in increased by 5, then the new standerd deviation will be -

A. 40

B.25

C. $\sqrt{4}$

D. 1600

Answer: A



17. A single letter is selected at random from the word "PROBABILITY" . The probability that it is a vowel is

A.
$$\frac{1}{11}$$

B. $\frac{4}{11}$
C. $\frac{3}{11}$

D. None of these

Answer: B



18. Two cards are drawn from a pack of 52 cards. The probability that one card is an ace and other is queen is

A.
$$\frac{{}^4C_2}{{}^{52}C_2}$$

B. $\frac{2}{{}^{52}C_2}$
C. $\frac{1}{663}$
D. $\frac{8}{663}$

Answer: D

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19. If

$$\sum_{i=1}^{9} (x_i - 5) = 9$$
 and $\sum_{i=1}^{9} (x_i - 5)^2 = 45$
then the standard deviation of the 9 items
 x_1, x_2, \dots, x_9 is
A. 9
B. 4
C. 3
D. 2

Answer: D



20. The standard deviation of the first n natural numbers is

A.
$$rac{\sqrt{n^2+1}}{12}$$

B. $rac{n^2-1}{12}$
C. $\sqrt{rac{n^2-1}{12}}$
D. $rac{n^2+1}{12}$

Answer: C



21. If the coefficient of variation of a distribution is 45% and the mean is 12, then its standard deviation is

A. 5.2

B. 5.3

C. 5.4

D. none of these

Answer: C



22. A unbaised coin is tossed n times. If the probability of getting 5 heads is equal to the probability of getting 6 heads then probability of getting 3 heads is

A.
$${}^{11}C_5 \left(rac{1}{2}
ight)^5$$

B. ${}^{11}C_6 \left(rac{1}{2}
ight)^6$
C. ${}^{11}C_3 \left(rac{1}{2}
ight)^{11}$

D. $\frac{11}{1024}$

Answer: C

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23. The probability that at least one of A and B occurs is 0.8. If A and B occur simultaneously with probability 0.1, then $P(A^{\,\prime}) + P(B^{\,\prime})$ is

A. 0.9

B. 0.15

C. 1.1

D. 1.2

Answer: C



24. All the students of a class performed poorly in Mathematics. The teacher decided to give grace marks of 10 to each of the students. Which of the following statistical measures will not change even after the grace marks

were given ? (1) median (2) mode (3) variance

(4) mean

A. median

B. mode

C. variance

D. mean

Answer: C

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25. 3 mangoes and 3 apples are in a box. If 2 fruits are chosen at random, the probability that one is a mango and the other is an apple,

is

A. 2/5B. $\frac{5}{6}$ C. $\frac{3}{36}$ D. $\frac{3}{5}$

Answer: D



26. Two coins are available, one fair and the other two-headed. Choose a coin and toss it once; assume that the unbiased coin is chosen with. probability $\frac{3}{4}$. Given that the outcome is head the probability that the two-headed coin was chosen, is

A.
$$\frac{3}{5}$$

B. $\frac{2}{5}$
C. $\frac{1}{5}$

D. $\frac{2}{7}$

Answer: B

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27. A crime is committed by one of two suspects, A and B. Initially, there is equal evidence against both of them. In further investigation at the crime scene, it is found that the guilty party had a blood type found in 20% of the population. If the suspect A does

match this blood type , whereas the blood type of suspect B is unknown, then the probability that A is guilty party =

A. 3/5 B. 5/6

- C. 1/3
- D. 2/3

Answer: B



28. If the quartile deviation is 1.79 and the first

quartile is 5.86. Find the third quartile.

A. 9.44

B. 7.46

C. 6

D. 4.99

Answer: A

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29. Four identical dice are thrown. The probability that same number will appear on each of the die is

A.
$$\frac{1}{18}$$

B. $\frac{1}{36}$
C. $\frac{1}{216}$
D. $\frac{5}{36}$

Answer: B



30. Coefficient of variation of two distributions are 60% and 70% and their standard deviations are 21 and 16 respectively. What are their arithmetic means?

A. 22.86, 35

B. 22, 35

C. 35, 22.86

D. 33, 25

Answer: C

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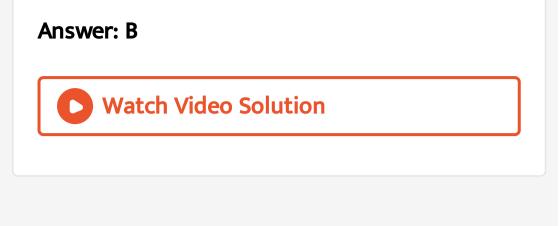
31. If two events A and B are such that
$$P\left(A^{C}\right) = 0.2, P(B) = 0.3$$
 and $P\left(A \cap B^{C}\right) = 0.4$, then $P\left(\frac{B}{A \cup B^{C}}\right)$

equals

A.
$$\frac{1}{11}$$

B. $\frac{4}{11}$
C. $\frac{1}{4}$

D. None of these



Wb Jee Workout Category 2 Single Option Correct Type 2 Marks

1. If the standard deviation of a variable $\xi s\sigma$, then standard deviation of variable $\frac{aX+b}{c}$ is $a\sigma$ (b) $\frac{a}{c}\sigma$ (c) $\left|\frac{a}{c}\right|\sigma$ (d) $\frac{a\sigma+b}{c}$

A. $a\sigma$

B.
$$\frac{a}{c}\sigma$$

C. $\left|\frac{a}{c}\right|\sigma$
D. $\frac{a\sigma + b}{c}$

Answer: C



2. Find the mean deviation about the mean for

the following data : 6, 7, 10, 12, 13, 4, 8, 12.

B. 2

C. 2.75

D. 2.55

Answer: C

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3. A die is thrown six times, the chance that exactly 3 times an odd number turn up is

A.
$$\frac{1}{16}$$

B.
$$\frac{3}{16}$$

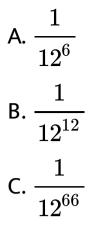
C. $\frac{5}{16}$

D. None of these

Answer: C

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4. A binary operation is chosen at random from the set of all binary operations on a set A containing n elements. The probability that the binary operation is commutative, is

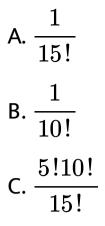


D. None of these

Answer: C



5. If 10 coins of Rs. 10, five coins of Rs. 5 are to be placed in a line, then the probability that the extreme coins are of Rs. 5 is



D. None of these

Answer: D



6. A bag A contains 3 white and 2 black balls and another bag B contains 2 white and 4 black balls. From a bag a ball is picked at random. The probability that the ball is black,

A.
$$\frac{2}{7}$$

B. $\frac{7}{9}$
C. $\frac{4}{15}$
D. $\frac{8}{15}$

Answer: D

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7. Six coins are tossed simultaneously. The probability that at least one tail turns up is

A.
$$\frac{63}{64}$$

B. $\frac{1}{64}$
C. $\frac{3}{32}$

D. None of these

Answer: A

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8. The mean and standard deviation of 20 observations are found to be 10 and 2 respectively. On rechecking, it was found that an observation 8 was incorrect. Find the new standard deviation if wrong item is omitted.

A. 1.99

B. 2.76

C. 2.99

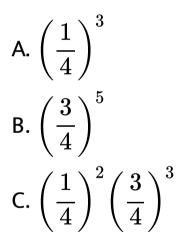
D. 3.46

Answer: A



9. The probability that a man can hit a target is $\frac{3}{4}$. He tries 5 times the probability that he

will hit the target at most one time is



D. None of these

Answer: A



10. If two events A and B are such that
$$P\left(A^C
ight)=0.3, P(B)=0.4$$
 and $P\left(A\cap B^C
ight)=0.5$ then $P\left(B/A\cup B^C
ight)$ is

A. 0.9

B. 0.25

C. 0.5

D. 0.8

Answer: B

11. A letter is taken out at random from 'ASSISTANT' and and another letter taken out from the letters of the word 'STATISTICS'. The probability that they are identical letters , is

A.
$$\frac{13}{90}$$

B. $\frac{1}{45}$
C. $\frac{19}{90}$

D. None of these

Answer: C



12. The sum of the squares of deviation of 10 observations from their mean 50 is 250,then coefficient of variation is

A. 10

B.40

C. 50

D. None of these

Answer: A



13. A person draws out two balls successivelyfrom a bag containing 6 red and 4 white balls.The probability that at least one of them willbe white is

A.
$$\frac{2}{3}$$

B. $\frac{3}{9}$
C. $\frac{48}{90}$

D. $\frac{12}{90}$

Answer: A

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14. Each of m urns consisting 6 red and 8 black balls. The $(m + 1)^{th}$ urn consisting 7 red and 7 black balls. One of the (m + 1) urns is selected randomly and two balls are drawn from it without replacement and found to be black. If the probability that $(m + 1)^{th}$ urn was selected to draw the ball is $\frac{1}{17}$, then the value of m equal to A. 16 B.15 C. 12 D. 10

Answer: C



1. A fair coin is tossed 99 times. If X is the number of times tail occurs, then P(X = r) is maximum where r is given by

A. 49

B. 51

C. 50

D. None of these

Answer: A::C



2. From the set {1, 2, 3, ...13}, two numbers x, y are drawn one-by-one with replacement. The probability $x^2 - y^2$ shall be divisible by 3 is

A.
$$\frac{96}{169}$$

B. $\frac{100}{169}$
C. $\frac{97}{169}$

D. None of these

Answer: C

D View Text Solution

3. If A and B are two events such that

$$P(A) = \frac{3}{4}$$
 and $P(B) = \frac{5}{8}$, then
A. $P(A \cup B) \ge \frac{3}{4}$
B. $P(A' \cap B) \le \frac{1}{4}$
C. $\frac{3}{8} \le P(A \cap B) \le \frac{5}{8}$

D. none of these

Answer: A::B::C



4. The sum and sum of squares corresponding to length x (in cm) and weight y (in gm) of

50 plant products are given below :

$$\sum_{i=1}^{50} x_i = 212, \ \sum_{i=1}^{50} x_i^2 = 902.8, \ \sum_{i=1}^{50} y_i = 261, \ \sum_{i=1}^{50} y_i^2 = 1457.6$$

If $C. V._x$ and $C. V._y$ are the coefficient of

variation of length and weight respectively, then variability in weight is

A. greater than variability of length

B. less than variability of length

C. equal to variability of length

D. data inadequate.

Answer: A



5. The probability that a candidate selected in competitive examinations of B.S.F., C.D.S., Bank P.O. and a, b and c respectively. Of these examinations, a candidate has 70% chance of selection in at least one, 50% chance of selection in at least two and 30% chance of selection in exactly two examinations. If $a+b+c=rac{I}{m}$, then find l+m if LCM (m) = 1.

A. 1/5

B. 12

C. 1/2

D. 5

Answer: B

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6. If 0 < P(A) < 1, 0 < P(B) < 1 and

 $P(A\cup B)=P(A)+P(B)-P(A)P(B)$,

then

A.
$$P(B/A) = P(B) - P(A)$$

B. P(A' - B') = P(A') - P(B')

 $\mathsf{C}.\, P(A\cup B)\,{}'=P(A\,{}')P(B\,{}')$

 $\mathsf{D}.\, P(A \,/\, B) = P(A)$

Answer: C::D

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7. Let r be the range of $n(\forall n \geq 1)$

observations

$$x_1, x_2, \dots, x_n$$
. If

$$S=\sqrt{rac{\sum_{i=1}^{n}\left(x_{i}-ar{x}
ight)^{2}}{n-1}}$$
 , then

A.
$$S < r\sqrt{rac{n^2+1}{n-1}}$$

B. $S \ge r\sqrt{rac{n}{n-1}}$
C. $S = r\sqrt{rac{n}{n-1}}$
D. $S < r\sqrt{rac{n}{n-1}}$

Answer: D

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8. The chance of an event happening is the square of the chance of a second event but

the odds against the first are the cube of the odds against the second. The chances of the events are

A.
$$p_1=rac{1}{9}$$

B. $p_1=rac{1}{16}$
C. $p_2=rac{1}{3}$
D. $p_2=rac{1}{4}$

Answer: A::C

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9. Let EandF be tow independent events. The probability that exactly one of them occurs is 11/25 and the probability if none of them occurring is 2/25. If P(T) deontes the probability of occurrence of the event T, then $P(E) = rac{4}{5}, P(F) = rac{3}{5}$ $P(E) = rac{1}{5}, P(F) = rac{2}{5}$ $P(E) = rac{2}{5}, P(F) = rac{1}{5}$ $P(E) = \frac{3}{5}, P(F) = \frac{4}{5}$ A. $P(E) = \frac{4}{5}, P(F) = \frac{3}{5}$

B.
$$P(E) = \frac{1}{5}, P(F) = \frac{2}{5}$$

C.
$$P(E) = rac{2}{5}, P(F) = rac{1}{5}$$

D. $P(E) = rac{3}{5}, P(F) = rac{4}{5}$

Answer: A::D



10. An electric component manufactured by 'RASU electronics' is tested for its defectiveness by asophisticated testing device. Let A denote the event the device is defective and B the event thetesting device reveals the component to be defective. Suppose $P\left(\frac{B}{A}\right) = a$. and $P\left(\frac{B'}{A'}\right) = 1 - \alpha$, where $0 < \alpha < 1$. If the probability that the component is not defective is λ . then the value of 4λ is

A.
$$P(B) = 2lpha(1-lpha)$$

B. $P(A'/B)1/2$
C. $P(B') = (1-lpha)^2 + lpha^2$
D. $P(A'/B') = [lpha/(1-lpha)]^2$

Answer: A::B::C



11. For any two events A and B in a sample space

A.
$$P(A \,/\, B) \geq rac{P(A) + P(B) - 1}{P(B)}$$

B. $Pig(A \cap \overline{B}ig) = P(A) - P(A \cap B)$ does

not hold

 $\mathsf{C}.\, P(A\cup B) = 1 - Pig(\overline{A}ig) \cdot Pig(\overline{B}ig)$ if A

and B are independent

D.
$$P(A \cup B) = 1 - Pig(\overline{A}ig) \cdot Pig(\overline{B}ig)$$
 if A

and B are disjoint

Answer: A::C

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12. A single which can can be green or red with probability $\frac{4}{5}$ and $\frac{1}{5}$ respectively, is received by station A and then transmitted to station B. The probability of each station reciving the signal correctly is $\frac{3}{4}$. If the singal received at station B is green, then the probability that

original singal was green is

A.
$$\frac{3}{7}$$

B. $\frac{6}{7}$
C. $\frac{12}{13}$
D. $\frac{9}{20}$

Answer: C

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13. The variable x takes two values x_1 and x_2 with frequencies f_1 and f_2 , respectively. If σ denotes the standard deviation of x, then

$$\begin{split} \mathsf{A}.\, \sigma^2 &= \frac{f_1 x_1^2 + f_2 x_2^2}{f_1 + f_2} - \left(\frac{f_1 x_1 + f_2 x_2}{f_1 + f_2}\right)^2 \\ \mathsf{B}.\, \sigma^2 &= \frac{f_1 f_2}{\left(f_1 + f_2\right)^2} (x_1 - x_2)^2 \\ \mathsf{C}.\, \sigma^2 &= \frac{\left(x_1 - x_2\right)^2}{\left(f_1 + f_2\right)^2} \end{split}$$

D. none of these

Answer: A::B

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14. A coin is tossed (2n + 1) times, the probability that head appear odd number of times is

A.
$$\displaystyle rac{n}{2n+1}$$

B. $\displaystyle rac{n+1}{2n+1}$
C. $\displaystyle rac{1}{2}$

D. None of these

Answer: C



15. Standard deviation of first n odd natural

numbers is

A.
$$\sqrt{n}$$

B. $\sqrt{\frac{(n+2)(n+1)}{3}}$
C. $\sqrt{\frac{n^2-1}{3}}$

D. *n*

Answer: C



1. Each of a and b can take values of 1 or 2 with equal probability . The probability that the equation $ax^2 + bx + 1 = 0$ has real roots, is equal to

A.
$$\frac{1}{2}$$

B. $\frac{1}{4}$
C. $\frac{1}{8}$
D. $\frac{1}{16}$

Answer: B



2. Cards are drawn one-by-one without replacement from a well shuffled pack of 52 cards. Then the probability that a face card (Jack, Queen or King) will appear for the first time on the third turn is equal to

A.
$$\frac{300}{2197}$$

B. $\frac{36}{85}$

C.
$$\frac{12}{85}$$

D. $\frac{4}{51}$

Answer: C



3. There are two coins, one unbiased with probability $\frac{1}{2}$ or getting heads and the other one is biased with probability $\frac{3}{4}$ of getting heads. A coin is selected at random and tossed. It shows heads up. Then the

probability that the unbiased coin was

selected is

A.
$$\frac{2}{3}$$

B. $\frac{3}{5}$
C. $\frac{1}{2}$
D. $\frac{2}{5}$

Answer: D

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4. A fair six-faced die is rolled 12 times. The probability that each face turns up twice is equal to

A.
$$\frac{12!}{6!6!6^{12}}$$

B.
$$\frac{2^{12}}{2^{6}6^{12}}$$

C.
$$\frac{12!}{2^{6}6^{12}}$$

D.
$$\frac{12!}{6^{2}6^{12}}$$

Answer: C

5. Ram is visiting a friend. Ram knows that his friend has 2 children and 1 of them is a boy. Assuming that a child is equally likely to be a boy or a girl, then the probality that the other child is a girl is

- A. 1/2 B. 1/3 C. 2/3
- D. 7/10

Answer: C

6. In a certain town, 60% of the families own a car, 30% own a house and 20% own both car and house. If a family is randomly chosen, then what is the probability that this family owns a car or a house but not both?

A. 0.5

B. 0.7

C. 0.1

D. 0.9

Answer: A

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7. The variance for first 20 natural numbers is

A. 133/4

B. 279/12

C. 133/2

D. 399/4

Answer: A



8. A fair coin is tossed at a fixed number of times. If the probability of getting exactly 3 headsequals the probability of getting exactly
5 heads, then the probability of getting exactly of getting

A. 1/64

B. 1/32

C.1/16

D. 1/8

Answer: B



9. If the letters of the word PROBABILITY are written down at random in a row, the probability that two B-s are retogether is

A. 2/11

B. 10 / 11

C.3/11

D. 6/11

Answer: A

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10. Let A and B be two events such that $P(A \cap B) = \frac{1}{6}, P(A \cup B) = \frac{31}{45}$ and $P(\overline{B}) = \frac{7}{10}$, then

A. A and B are independent

B. A and B are mutually exclusive

$$\mathsf{C}.\,P\!\left(\frac{A}{B}\right) < \frac{1}{6}$$
$$\mathsf{D}.\,P\!\left(\frac{B}{A}\right) < \frac{1}{6}$$

Answer: A

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11. S.D. of n observation $a_1, a_2, a_3, \dots, a_n$ is σ then the S.D. of the observations $\lambda a_1, \lambda a_2, \dots, \lambda a_n$ is A. $\lambda\sigma$

B. $-\lambda\sigma$

C. $|\lambda|\sigma$

D. $\lambda_n\sigma$

Answer: C

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12. Mean of n observations x_1, x_2, \ldots, x_n is \bar{x} .

If an observation x_q is replaced by x'_q then

the new mean is

A.
$$ar{x} = x_q + x\,'_q$$

B. $rac{(n-1)ar{x} + x\,'_q}{n}$
C. $rac{(n-1)ar{x} - x\,'_q}{n}$
D. $rac{nar{x} - x_q + x\,'_q}{n}$

Answer: D



13. The probability that a non-leap your selected at random will contain 53 Sunday is

A. 0

B. 1/7

C. 2/7

D. 3/7

Answer: B

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14. In order to get a head at least once with probability ≥ 0.9 , the minimum number of timesa unbiased coin needs to be tossed is A. 5

B. 4

C. 5

D. 6

Answer: B

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15. A student appears for tests I, II and III. The student is successful if the passes either in tests I and II or tests I and III. The probabilities

of the student passing in tests I, II and III are p,q and $\frac{1}{2}$, respectively. If the probability that the student is successful, is $\frac{1}{2}$, then

A.
$$p(1+q)=1$$

B.
$$q(1+p)=1$$

$$\mathsf{C}.\,pq=1$$

D.
$$rac{1}{p}+rac{1}{q}=1$$

Answer: A

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16. A problem in mathematics is given to 4

students whose chances of solving individually

are $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$ and $\frac{1}{5}$. The probability that the problem will be solved at least by one student

is

A.
$$\frac{2}{3}$$

B. $\frac{3}{5}$
C. $\frac{4}{5}$
D. $\frac{3}{4}$

Answer: C





17. If X is a random variable such that $\sigma(X)=2.6,$ then $\sigma(1-4X)$ is equal to

A. 7.8

B. - 10.4

C. 13

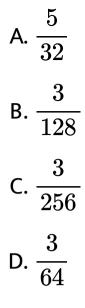
D. 10.4

Answer: D

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Wb Jee Previous Years Questions Category 2 Single Option Correct Type 2 Marks

1. An objective type test paper has 5 questions. Out of these 5 question, 3 questions have four options each (A, B, C, D) with option being the correct answer. The other 2 questions have two options each, namely true and false. A candidate randomly ticks the options. The probability that he/she will tick the correct option in atleast four questions is

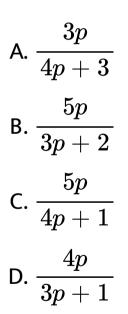


Answer: D



2. A student answers a multiple choice question with 5 alternatives, of which exactly one is correct. The probability that he knows

the correct answer is p, 0 . If he doesnot know the correct answer, he randomlyticks one answer. Given that he has answeredthe question correctly, the probability that hedid not tick the answer randomly, is



Answer: C



3. A poker hand consists of 5 cards drawn atrandom from a well-shuffled pack of 52 cards.Then the probability that a poker hand consists of a pair and a triple of equal face values (for example, 2 sevens and 3 kings or 2 aces and 3 queens, etc.) is

A.
$$\frac{6}{4165}$$

B. $\frac{23}{4165}$
C. $\frac{1797}{4165}$

D. $\frac{1}{4165}$

Answer: A

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4. A person goes to office either by car, scooter, bus or train probability of which being $\frac{1}{7}$, $\frac{3}{7}$, $\frac{2}{7}$ and $\frac{1}{7}$ respectively. Probability that he reaches office late, if he takes car, scooter, bus or train is $\frac{2}{9}$, $\frac{1}{9}$, $\frac{4}{9}$ and $\frac{1}{9}$ respectively. Given that he reached office in time, then what is the probability that he travelled by a car?

A. 1/7 B. 2/7 C. 3/7

D.4/7

Answer: A



5. If 5 distinct balls are placed at random into5 cells, then the probability that exactly onecell remains empty is

A. 48/125

B. 12/125

C.8/125

D. 1/125

Answer: A



6. A survey of people in a given region showed that 20% were smokers. The probability of death due to lungcancer, given that a person smoked, was 10 times the probability of death due to lung cancer, given thata person did not smoke. If the probability of death due to lung cancer in the region is 0.006, what is the probability of death due to lung cancer given that a person is a smoker?

A. 1/140

B. 1/70

C.3/140

D. 1/10

Answer: C



7. In a group 14 males and 6 females, 8and 3 of the males and females respectively are aged above 40 years. The probability that a person selected at random from the group is aged above 40 years, given that the selected person

is female, is

A.
$$\frac{2}{7}$$

B. $\frac{1}{2}$
C. $\frac{1}{4}$
D. $\frac{5}{6}$

Answer: B

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1. For the two events A and B, let P(A) = 0.5and P(B) = 0.6. The necessarily false statement(s) is/are

A.
$$P(A \cap B) = 0.35$$

B. $P(A \cap B) = 0.45$

C.
$$P(A \cap B) = 0.65$$

D. $P(A \cap B) = 0.02$

Answer: C::D



2. Suppose a machine produces metal parts that contains some defective parts with probability 0.05. How many parts should be produced in order that the probability of at least one part being defective is 1/2 or more ? (Given $\log_{10} 95 = 1.977$ and $\log_{10} 2 = 0.3$) B. 12

C. 15

D. 14

Answer: C::D

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3. If A,B are two eevts such that
$$P(A\cup B)\geq rac{3}{4} ext{ and } rac{1}{8}\leq P(A\cap B)\leq rac{3}{8}$$

then

A.
$$P(A)+P(B)\leq rac{11}{8}$$

B. $P(A)\cdot P(B)\leq rac{3}{8}$
C. $P(A)+P(B)\geq rac{7}{8}$

D. none of these

Answer: A::C

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