



INDIAN SCHOOL AL WADI AL KABIR
Department of Mathematics, 2020-2021

Class XI

APPLIED MATHEMATICS (241)
WORKSHEET_ Probability

30.11.2020

Q.1. A coach is training 3 players. He observes that the player A can hit a target 4 times in 5 shots, player B can hit 3 times in 4 shots and the player C can hit 2 times in 3 shots.
 Based on the above information answer the following:

(i) What is the probability that A, B and C hit the target in a single trial by each one of them?

A	$\frac{4}{5}$	B	$\frac{3}{5}$	C	$\frac{2}{5}$	D	$\frac{1}{5}$
----------	---------------	----------	---------------	----------	---------------	----------	---------------

(ii) Referring to (i), what is the probability that A and B will hit the target and C will lose?

A	$\frac{4}{5}$	B	$\frac{3}{5}$	C	$\frac{2}{5}$	D	$\frac{1}{5}$
----------	---------------	----------	---------------	----------	---------------	----------	---------------

(iii). Referring to (i), what is the probability that the target is hit at least once?

A	$\frac{1}{60}$	B	$\frac{59}{60}$	C	$\frac{11}{60}$	D	$\frac{1}{4}$
----------	----------------	----------	-----------------	----------	-----------------	----------	---------------

(iv). Referring to (i), what is the probability that none of them will hit the target?

A	$\frac{1}{60}$	B	$\frac{59}{60}$	C	$\frac{11}{60}$	D	$\frac{1}{4}$
----------	----------------	----------	-----------------	----------	-----------------	----------	---------------

(v). Referring to (i), what is the probability that exactly one of them hit the target?

A	$\frac{4}{5}$	B	$\frac{3}{5}$	C	$\frac{2}{5}$	D	$\frac{1}{5}$
----------	---------------	----------	---------------	----------	---------------	----------	---------------

Q.2. In answering a question on a multiple-choice test, a student either knows the answer or guesses. Let $\frac{3}{4}$ be the probability that he knows the answer. Assuming that the student who guesses the answer will be correct with a probability $\frac{1}{4}$. One answer is selected at random and found to be correct.

Let E_1, E_2 and A be the events defined as follows:

E_1 – student knows the answer, E_2 – Student guesses the answer and

A – the student answered the question correctly.

Based on the above information answer the following:

(i)	$P(A/E_1)$							
	A	1	B	$\frac{1}{2}$	C	$\frac{3}{4}$	D	$\frac{1}{4}$
(ii).	$P(A/E_2)$							
	A	1	B	$\frac{1}{2}$	C	$\frac{3}{4}$	D	$\frac{1}{4}$
(iii)	$P(E_1/A)$							
	A	1	B	$\frac{12}{13}$	C	$\frac{11}{13}$	D	$\frac{1}{4}$
(iv)	$P(E_2/A)$							
	A	1	B	$\frac{12}{13}$	C	$\frac{1}{13}$	D	$\frac{1}{4}$
(v)	$P(E_1 \cap A) =$							
	A	1	B	$\frac{1}{3}$	C	$\frac{3}{4}$	D	$\frac{1}{16}$
Q3.	Evaluate $P(A \cup B)$ if $2P(A) = P(B) = \frac{5}{13}$ and $P(A/B) = \frac{2}{5}$							
Q4.	The probability of an event A occurring is 0.4 and of B is 0.5. If A and B are mutually exclusive events, then find the probability of neither A nor B.							
Q5.	A black and a red die are rolled. Find the conditional probability of obtaining a sum greater than 9, given that the black die resulted in a 5.							
Q6.	A bag contains 4 red, 3 black and 2 white balls. If three balls are drawn one by one without replacement, then what is the probability that all three balls are black?							
Q7.	A coin is tossed n times. What is the number of all possible events?							
Q8.	If E and F are events such that $P(E) = \frac{1}{4}$, $P(F) = \frac{1}{2}$ and $P(E \text{ and } F) = \frac{1}{5}$, then find $P(\text{not } E \text{ and not } F)$.							
Q9.	A coin is tossed 4 times. Find the probability that at least one head turns up.							

Q10.	A die is thrown. If A is the event that the number obtained is greater than 3 and B is the event that the number obtained is less than 5, then find $P(A \cup B)$
Q11.	In Class XI of a school 40% of the students study Mathematics and 30% study Biology. 10% of the class study both Mathematics and Biology. If a student is selected at random from the class, find the probability that he will be studying Mathematics or Biology.
Q12.	Two students A and B appeared in an examination. The probability that A will qualify the examination is 0.05 and that B will qualify the examination is 0.10. The probability that both will qualify the examination is 0.02. Find the probability that both A and B will not qualify the examination

&&&&&&&

ANSWERS	1.	(i) C (ii) D (iii) B (iv) A (v) D	2.	(i). A (ii). D (iii). B (iv). C (v). C	3.	$\frac{11}{26}$	4.	0.1
	5.	$\frac{1}{3}$	6.	$\frac{1}{84}$	7.	2^{2^n}	8.	$\frac{3}{8}$
	9.	$\frac{15}{16}$	Q10.	1	11	0.6	12	0.87
