

NPTEL

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Course outline

How does an NPTEL online course work?

Week 0 :

Week 01

- Lecture 01: Overview of Module 01 & Introduction of Causality
- Lecture 02: Correlation and Causality
- Lecture 03: Correlation and Causality (Contd.)
- Lecture 04: Correlation and Causality (Contd.)
- Lecture 05: Probability Theory
- Lecture 06: Probability Theory (Contd.)
- Lecture 07: Probability Theory (Contd.)
- Lecture 08: Probability Theory (Contd.)
- Lecture 09: Posterior Probability
- Lecture 10: Bayesian Theorem
- Lecture 11 : Bayesian Theorem (Contd.): Repeated Trial
- Lecture 12 : Bayesian Theorem (Contd.): Example of Diamond Identification

Quiz: Week 1:Assignment 1Feedback for Week 1

Week 02

Week 03

Week 04

Week 05 :

Week 06

Week 07

Week 08

Week 09

Week 10

Week 11

Week 12

Course Material

Download Videos

Assignment Solution

Week 1:Assignment 1

The due date for submitting this assignment has passed.

Due on 2021-08-18, 23:59 IST.

As per our records you have not submitted this assignment.

1) What is the probability of getting at least one tail if a coin is tossed 5 times?

1 point

- a) $\frac{23}{32}$
- b) $\frac{31}{32}$
- c) $\frac{13}{16}$
- d) $\frac{23}{64}$

- ☐ a
- ☐ b
- ☐ c
- ☐ d

No, the answer is incorrect.

Score: 0

Accepted Answers:

b

2) A random experiment means the results from the experiment are equally probable

1 point

- A. True
- B. False

- ☐ A
- ☐ B

No, the answer is incorrect.

Score: 0

Accepted Answers:

B

3) Which of the following statement is true ?

1 point

- A. Mutually exclusive events imply independence
- B. Independence imply mutually exclusiveness
- C. Both are true
- D. None true

- ☐ A
- ☐ B
- ☐ C
- ☐ D

No, the answer is incorrect.

Score: 0

Accepted Answers:

D

4) Are the following statements True or False:

1 point

- i) Bayesian probability doesn't depend on the historical facts
- ii) Bayesian probability helps us in updating our beliefs continuously

- A. i)True; (ii)False
- B. Both False
- C. i) False; ii) True
- D. Both True

- ☐ A
- ☐ B
- ☐ C
- ☐ D

No, the answer is incorrect.

Score: 0

Accepted Answers:

C

5) Bayesian probability helps us to get rid of our mental stereotypes

1 point

- A. True
- B. False

- ☐ A
- ☐ B

No, the answer is incorrect.

Score: 0

Accepted Answers:

A

6) If 5 persons in every 1000 person is detected with Covid and the test accuracy is 95%, what is the probability of having Covid given the test result is positive

0 points

- a. 9.02%
- b. 42.63%
- c. 8.43%
- d. 43.58%

- ☐ a
- ☐ b
- ☐ c
- ☐ d

No, the answer is incorrect.

Score: 0

Accepted Answers:

d

7) Which of the following describes a causal relationship?

1 point

- a. Tall people are more intelligent
- b. Age of a child and the number of siblings of the child
- c. Distance travelled and time spent driving
- d. Number of correct answers in this quiz and the test score

- ☐ a
- ☐ b
- ☐ c
- ☐ d

No, the answer is incorrect.

Score: 0

Accepted Answers:

c

d

8) Identify the false claim about correlations.

1 point

- a. If two variables are correlated, it means variation in one cause variation in the other.
- b. If two variables are causally related, they will be correlated.
- c. Sometimes correlations are products of some other, unobserved, factor.
- d. Correlations between variables can be either negative or positive.

- ☐ a
- ☐ b
- ☐ c
- ☐ d

No, the answer is incorrect.

Score: 0

Accepted Answers:

a

9) Vaccines produced by a pharmaceutical company are found to be defective. The details of the production from its 3 laboratories are provided in the below table.

1 point

Laboratory	% of total vaccines produced	% of defective vaccine
X	35%	1.5%
Y	35%	1%
Z	30%	2%

What is the probability of a randomly selected vaccine to be defective and produced in factory Y?

- a) 35.7%
- b) 32.6%
- c) 22.5%
- d) 23.7%

- ☐ a
- ☐ b
- ☐ c
- ☐ d

No, the answer is incorrect.

Score: 0

Accepted Answers:

d

10) Please refer the table and answer the question:

1 point

Age	Total COVID Deaths	Death With Comorbidity	Death with No Comorbidity
0 to 30 years	500	170	330
31- 60 years	1500	1200	300
61 – 80 years	2000	1800	200
80+ years	1000	900	100

What is the probability of a person dying in the age group 31 to 60 years? What is the probability of that person dying with comorbidity?

- a) 25%; 50%
- b) 50%; 80%
- c) 30%; 80%
- d) 85%, 35%

- ☐ a
- ☐ b
- ☐ c
- ☐ d

No, the answer is incorrect.

Score: 0

Accepted Answers:

c