**Python**

**Ans 1.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron\_Interview\_Based\_Assignment\_Python.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron_Interview_Based_Assignment_Python.ipynb)

**Ans 2.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron\_Interview\_Based\_Assignment\_Python.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron_Interview_Based_Assignment_Python.ipynb)

**Ans 3.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron\_Interview\_Based\_Assignment\_Python.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron_Interview_Based_Assignment_Python.ipynb)

**Ans 4.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron\_Interview\_Based\_Assignment\_Python.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron_Interview_Based_Assignment_Python.ipynb)

**Ans 5.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron\_Interview\_Based\_Assignment\_Python.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron_Interview_Based_Assignment_Python.ipynb)

**Ans 6.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron\_Interview\_Based\_Assignment\_Python.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron_Interview_Based_Assignment_Python.ipynb)

**Ans 7.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron\_Interview\_Based\_Assignment\_Python.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron_Interview_Based_Assignment_Python.ipynb)

**Ans 8.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron\_Interview\_Based\_Assignment\_Python.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron_Interview_Based_Assignment_Python.ipynb)

**Ans 9.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron\_Interview\_Based\_Assignment\_Python.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron_Interview_Based_Assignment_Python.ipynb)

**Ans 10.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron\_Interview\_Based\_Assignment\_Python.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/Ineuron_Interview_Based_Assignment_Python.ipynb)

**Statistics**

**Ans 1.** Thecorrelation coefficient is a number calculated from given data that measures the strength of the linear relationship between two variables: x and y. The sign of the linear correlation coefficient indicates the direction of the linear relationship between x and y. When r (the correlation coefficient) is near 1 or −1, the linear relationship is strong; when it is near 0, the linear relationship is weak.

Here, the correlation coefficient between SAT scores and college GPA is 0.7. So, it is close to 1 and positive. Which indicates that SAT scores and GPA are directly proportional i.e., if GPA is high then SAT score is also high for a particular student and the correlation is strong.

**Ans 2. (a)**

For all normal distributions, 68.2% of the observations will appear within plus or minus one standard deviation of the mean; 95.4% of the observations will fall within +/- two standard deviations; and 99.7% within +/- three standard deviations.

Here, heights of 160 cm- 180 cm lie within +/- one standard deviation from the mean. So, 68.2% of the individuals in the dataset have heights between 160 cm and 180 cm.

**Ans 2. (b)**

The mean of the sampling distribution is equal to the population mean, and the variance of the sampling distribution is equal to the population variance divided by the sample size. These facts are summarized in the Central Limit Theorem.

So, the probability that the sample mean will be greater than the population mean is 0.

**Ans 2. (c)**

**= 1.5**

**Ans 2. (d)**

For bottom 5% of height of the population, from z-table we have, z= -1.64

Now,

X= -1.64\*10 + 170= 153.6 cm

**Ans 2. (e)**

The classic coefficient of variation (CV) is the ratio of the standard deviation to the mean.

CV= 10/170= 0.0588

**Ans 2. (f)**

Since the given distribution is normal. The skewness is 0.

**Ans 3.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/1%20Statistics\_Interview\_Based\_Questions.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/1%20Statistics_Interview_Based_Questions.ipynb)

**Ans 4.**

Total number of perfect squares between 1 and 20 is 4 (i.e., 1, 4, 9, or 16).

Probability of getting a perfect square= 4/20= 1/5

**Ans 5.**

P(A)= 0.8, P(B)= 0.2

P(A\_late) = 0.05, P(B\_late)= 0.1

Probability that the late taxi belongs to company A = (0.8x0.05 + 0.2x0.1)/0.8= 0.075

**Ans 6.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/1%20Statistics\_Interview\_Based\_Questions.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/1%20Statistics_Interview_Based_Questions.ipynb)

**Ans 7.**

The given equation of the lines of regression are  
x+2y−5=0.......(i)  
and 2x+3y−8=0.....(ii)

Rewriting the equations (i) and (ii), we have  
From equation (i)  
y=2−x​+25​  
y=−0.5x+2.5 \*regression line of y on x)  
byx​=rσx​σy​​=−0.5....(iii)

From eqution (ii),  
x=2−3​y+28​  
x=−1.5y+4( regression line of x on y)  
bxy​=rσy​σx​​  
∴r2=byx​×bxy​=(−0.5)×(−1.5)=0.75  
∴ r=0.75​=±0.866

But bxy​ and byx​ being both −ve therefore, r is also −ve.

Correlation coefficient (r)=−0.866

Varianceof x i.e., σx2​=12  
∴ σx​=12​

From equation (iii)  
rσx​σy​​=−0.5  
−0.866.12​σx​​=−0.5  
σy​=0.8660.5×12​​=2  
∴ Variance of y i.e., σy2​=4

**Ans 11.**

[**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/1%20Statistics\_Interview\_Based\_Questions.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/1%20Statistics_Interview_Based_Questions.ipynb)

# Machine learning

**INTERMEDIATE QUESTIONS :**

**Ans 1.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/1\_Machine\_learning\_intermediate\_questions.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/1_Machine_learning_intermediate_questions.ipynb)

**Ans 2.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/2\_Machine\_learning\_intermediate\_questions.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/2_Machine_learning_intermediate_questions.ipynb)

**Ans 3.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/3\_Machine\_learning\_intermediate\_questions.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/3_Machine_learning_intermediate_questions.ipynb)

**Ans 5.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/5\_Machine\_learning\_intermediate\_questions.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/5_Machine_learning_intermediate_questions.ipynb)

# Deep Learning

### Ans 1. <https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/1_Deep_Learning.ipynb>

**Ans 2.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/2\_Deep\_Learning.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/2_Deep_Learning.ipynb)

### Ans 3. <https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/3_Deep_Learning.ipynb>

**Natural Language Processing**

**Ans 1.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/1\_NLP\_youtube\_comment\_scraper\_save\_to\_csv.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/1_NLP_youtube_comment_scraper_save_to_csv.ipynb)

**Ans 2.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/2\_NLP.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/2_NLP.ipynb)

**Ans 3.** <https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/2_NLP.ipynb>

**Ans 4.** [**https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/2\_NLP.ipynb**](https://github.com/mrinalkantisikdar/Ineuron-Interview-Based-Assignment/blob/main/2_NLP.ipynb)