Matplotlib & Probability Quiz – Questions with Answers

Q1. Which library is used for creating plots in Python?

Answer: C. Matplotlib

Q2. Which function is used to create a simple line plot?

Answer: C. plt.plot()

Q3. Coding Question: Write code to plot the following data:
x = [1,2,3,4,5]
y = [2,4,6,8,10]
Add Title: 'Simple Line Plot', X label: 'X values', Y label: 'Y values'

Answer:

```
import matplotlib.pyplot as plt
x = [1,2,3,4,5]
y = [2,4,6,8,10]
plt.plot(x, y)
plt.title('Simple Line Plot')
plt.xlabel('X values')
plt.ylabel('Y values')
plt.show()
```

Q4. Which function displays the plot?

Answer: B. plt.show()

Q5. Which chart is best to show frequency distribution?

Answer: B. Histogram

Q6. Coding Question: Create a histogram using random exam scores between 0 and 100.

Answer:

```
import numpy as np
import matplotlib.pyplot as plt
scores = np.random.randint(0, 101, 100)
plt.hist(scores)
plt.show()
```

Q7. Which chart shows relationship between two variables?

Answer: A. Scatter plot

Q8. Coding Question: Create a scatter plot of:
hours_studied = [1,2,3,4,5]
marks = [40,50,65,70,85]

Answer:
```
import matplotlib.pyplot as plt
hours_studied = [1,2,3,4,5]
marks = [40,50,65,70,85]
plt.scatter(hours_studied, marks)
plt.show()
```

Q9. Probability value always lies between:

Answer: B. 0 and 1

Q10. Probability of getting a head when tossing a fair coin:

Answer: C. 0.5

Q11. Coding Question: Simulate tossing a coin 100 times using NumPy and plot the results using a bar chart.

Answer:
```
import numpy as np
import matplotlib.pyplot as plt
tosses = np.random.choice(['Head', 'Tail'], 100)
heads = (tosses == 'Head').sum()
tails = (tosses == 'Tail').sum()
plt.bar(['Head', 'Tail'], [heads, tails])
plt.show()
```

Q12. Which distribution is used for coin toss outcomes?

Answer: B. Binomial

Q13. Coding Question: Generate 1000 random numbers from a normal distribution and plot histogram.

Answer:
```
import numpy as np
import matplotlib.pyplot as plt
data = np.random.normal(0, 1, 1000)
plt.hist(data)
plt.show()
```

Q14. Interpretation Question: If a histogram looks bell-shaped, which distribution is it?

Answer: Normal distribution

Q15. Coding Question: Create a line chart showing visitor trend.
visitors = [120, 135, 150, 160, 180, 200, 210]

Answer:
```
import matplotlib.pyplot as plt
visitors = [120, 135, 150, 160, 180, 200, 210]
plt.plot(visitors)
plt.show()
```

Q16. Interpretation: If visitor numbers increase steadily, what does it indicate?

Answer: C. Growing traffic

Q17. Which plot is best to visualize probability distribution shape?

Answer: A. Histogram