1. Which parameter represents the arrival rate in a queueing model with Poisson input?

a) λ
b) μ
c) ρ
d) λμ

Answer: a) λ
Explanation: In queueing models with Poisson input, λ represents the arrival rate, typically measured in arrivals per unit time.

2. What distribution is commonly used to model service times in queueing systems with exponential service?

a) Poisson
b) Binomial
c) Exponential
d) Normal

Answer: c) Exponential
Explanation: Exponential distribution is commonly used to model service times in queueing systems with exponential service, where the service times are memoryless.

3. In a single-server queueing model, what happens when the arrival rate exceeds the service rate?

a) The system becomes stable
b) The queue gradually empties

c) The queue grows indefinitely
d) The waiting time decreases

Answer: c) The queue grows indefinitely
Explanation: When the arrival rate exceeds the service rate in a single-server queueing model, the queue grows indefinitely as arrivals outpace service.

4. Which parameter represents the utilization of a queueing system?

a) λ
b) μ
c) ρ
d) L

Answer: c) ρ
Explanation: The utilization (ρ) of a queueing system is defined as the ratio of the average arrival rate (λ) to the average service rate (μ).

5. What type of queueing model assumes an infinite population from which customers arrive?

a) M/M/1
b) M/M/c
c) M/G/1
d) M/D/1

Answer: a) M/M/1
Explanation: In the M/M/1 queueing model, it is assumed that the population from which customers arrive is infinite.

6. In a multi-server queueing model, what parameter determines the number of servers available to serve customers?

a) λ
b) μ
c) c
d) L

Answer: c) c
Explanation: In multi-server queueing models, ‘c’ represents the number of servers available to serve customers simultaneously.

7. What is the inter-arrival time distribution commonly assumed in queueing models with Poisson input?

a) Uniform
b) Exponential
c) Normal
d) Binomial

Answer: b) Exponential
Explanation: Queueing models with Poisson input commonly assume an exponential distribution for inter-arrival times.

8. Which type of service assumes a constant rate of service in a queueing system?

a) Exponential service
b) Poisson service

c) Constant service
d) Variable service

Answer: c) Constant service
Explanation: Constant service assumes a fixed rate of service in a queueing system, regardless of the number of customers in the system.

9. What parameter represents the average number of customers in a queueing system in steady state?

a) L
b) λ
c) μ
d) ρ

Answer: a) L
Explanation: 'L' represents the average number of customers in a queueing system in steady state, also known as the average number of customers in the queue.

10. In queueing system simulation, what does the term "warm-up period" refer to?

a) The period during which servers are not operational
b) The initial period of simulation to stabilize system behavior
c) The period when customer arrivals are at their peak
d) The time taken for a customer to complete service

Answer: b) The initial period of simulation to stabilize system behavior
Explanation: The warm-up period in queueing system simulation refers to the initial period of

simulation where system behavior stabilizes before collecting meaningful performance metrics.