# SY PSOT IT E-24-25-A-B

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| **Started on** | Monday, 14 April 2025, 8:02 PM |
| **State** | Finished |
| **Completed on** | Monday, 14 April 2025, 8:54 PM |
| **Time taken** | 51 mins 12 secs |
| **Grade** | **22.00** out of 25.00 (**88**%) |

**Question 1**

Partially correct

Mark 6.00 out of 9.00

At a railway station, only one train is handled at a time the railway yard is sufficient only for three trains. Trains arrive at the station at an average rate of 6 per hour and the railway station can handle them on an average 6 per hour. Assuming Poisson arrivals and exponential service distribution, find

1.service Utilization factor=

1

2.number of trains in the system (exact value)=

1.5

3.idle time if arrival rate is doubled=

0.067 write three places of decimals.

4.the average waiting time of a new train arriving at the yard=

0.17 write two places of decimals.

**Question 2**

Correct

Mark 12.00 out of 12.00

At a road transport company customers arrive at a rate of 8 per hour and the clerk can, on an average, service 12 customers per hour.

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| the average length in system | 2 |
| value of traffic intensity | 0.67 |
| probability of less than 5 customers in the system | 0.8683 |
| time of customers in the system in hours | 0.25 |
| expected length of non empty queue | 3 |
| probability that the store is free | 0.33 |

**Question 3**

Correct

Mark 2.00 out of 2.00

In the standard format used to describe queuing models:
$\{(a/b/c):(d/e)\}$, $d$ stands for

(a) number of servers (service channels)
(b) queue (or service) discipline
(c) arrivals distribution
(d) capacity of the system (queue plus service)

Select one:

- b
- c
- d
- a

**Question 4**

Correct

Mark 2.00 out of 2.00

Which of the following relations is true with respect to a queuing system

(a) $W_s = W_q - \frac{1}{\mu}$
(b) $W_s = W_q + \frac{1}{\mu}$
(c) $W_s = W_q + \frac{\lambda}{\mu}$
(d) $W_s = W_q - \frac{\mu}{\lambda}$

Select one:

- b
- c
- a
- d

◀ Tut 9:Quiz on NLPP