

Plot No. 2, Knowledge Park-III, Greater Noida (U.P.) –201306

**POST GRADUATE DIPLOMA IN MANAGEMENT (2021-23)**  
**END TERM EXAMINATION (TERM -II)**

Subject Name: Production &amp; Operations Management

Time: **02.30 hrs**

Sub. Code: PG25

Max Marks: **40****Note:**

All questions are compulsory. Section A carries 5 marks: 5 questions of 1 mark each, Section B carries 21 marks having 3 questions (with internal choice question in each) of 7 marks each and Section C carries 14 marks one Case Study having 2 questions of 7 marks each.

**SECTION - A**

Attempt all questions. All questions are compulsory.

**1×5 = 5 Marks****(CO1)**

Q. 1 (A): Why efficiency versus innovation debate is important from strategic angle in Production & Operations? Explain.

Q. 1 (B): Are Economies of Scale possible in services? Why or why not?

Q. 1 (C): What is the role of project management in operations? Give examples of any situation.

Q. 1 (D): What is importance of concurrent engineering in product design & development?

Q. 1 (E): What is the role of divergence and complexity in service process?

**SECTION – B****07 x 3 = 21 Marks**

All questions are compulsory (Each question has an internal choice. Attempt any one (either A or B) from the internal choice)

**Q. 2: (A).** Gamma Motors estimates that it will sell 30,000 units of submersible pumps for upcoming year. The ordering cost is Rs. 1000 per order and carrying cost per unit per year is 18% of purchase price per unit. The purchase price per unit is Rs. 3000. Find the below:

A) Economic Order Quantity (EOQ)

B) Numbers of order per year

C) Time between successive orders.

**Or**

**Q. 2: (B).** What is importance of Economic Order Quantity (EOQ) and Re-order point in the inventory management? Star-link agency is large statewide distributor of bicycles which supply to retail outlets. The cycles are ordered from Haryana and order fulfillment process take 4 weeks. The annual demand for the cycles is estimated at around 50,000 cycles with average per unit cost Rs 5000. The inventory carrying cost is estimated to be about 8% of the average value of bicycle. The cost of processing each order is Rs 8000. Find out the optimum order quantity and recorder point? (CO2)

**Q. 3: (A).** An electric vehicle manufacturing firm is looking for suitable location for setup new plant. The company management has identified 3 locations. Each of this location had few advantages and also some limitations. Based on a survey of company has identified five factors that will determine the suitability of site for setting up the new factory. The factors and the score out of 100 for each of them are given below:

Sr. No.	Factors for consideration	Score(out of 100)
1	Availability of component suppliers	80
2	Availability of labor	60
3	Availability of land	90
4	Government policies and tax benefits	50
5	Quality of basic and social infrastructure	70

The company management has done survey at each location and evaluated basis on the factors (mentioned above) and they have given the score on zero to 100 scale for each factor for each location as per table below:

Sr. No.	Factors for consideration	Site 1	Site 2	Site 3
1	Availability of component suppliers	50	80	90
2	Availability of labor	70	60	70
3	Availability of land	60	70	50
4	Government policies and tax benefits	90	65	70
5	Quality of basic and social infrastructure	80	50	60

As an operations manager you have to assess the attractiveness of each site. Rank each site based on the above data and identify most appropriate site for locating the new plant. (CO2)

Or

**Q. 3: (B).** "It tools are essential for MRP and ERP in Production and Operations Management". Explain this statement with suitable examples. (CO2)

**Q. 4: (A).** "Good Times" restaurant in the city of Patna has introduced quality control measures in running the restaurant. One such measure is to record the time of arrival and of the departure of each guest (or the group of guests) on the bill. At the end of a day, five bills are randomly picked up and the "amount of time spent in the restaurant" for each of those bills (i.e. by the guests) is noted. For the last week, the following data were obtained. With these figures of the last week, calculate the lower control limit and upper control limit with the sample means and Range charts. (For a sample size of 5, the coefficient is  $A_2 = 0.577$ )

Day	Time Spent in Restaurant (minutes)				
Sunday	55	63	73	84	75
Monday	46	41	88	53	59
Tuesday	82	89	65	77	37
Wednesday	30	48	27	43	77
Thursday	42	29	28	69	37
Friday	81	71	47	49	52
Saturday	87	59	92	81	95

(CO3)

Or

**Q. 4: (B).** What is role of Quality Control in operation? Discuss the quality dimensions in detail. Explain the statistical process control in production & operation with suitable assumptions in the following examples:

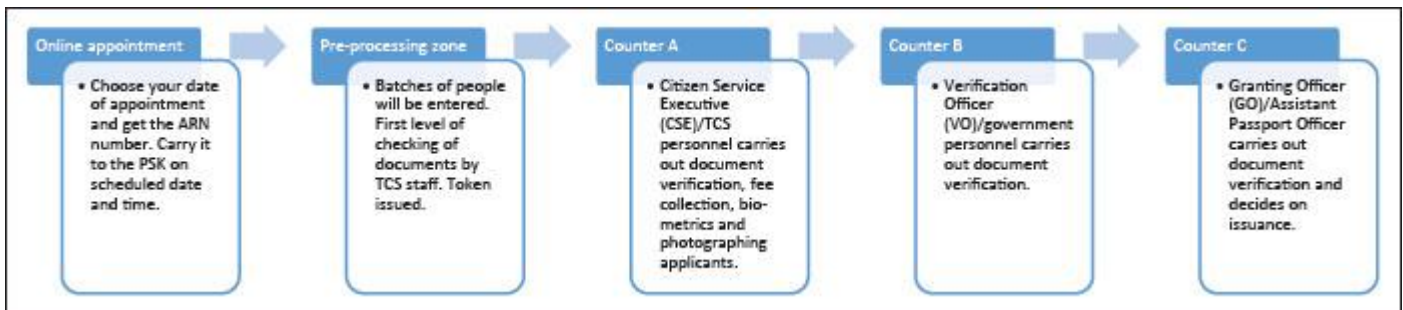
1. Pickle manufacturing unit
2. Blood collection and testing agency.

(CO3)

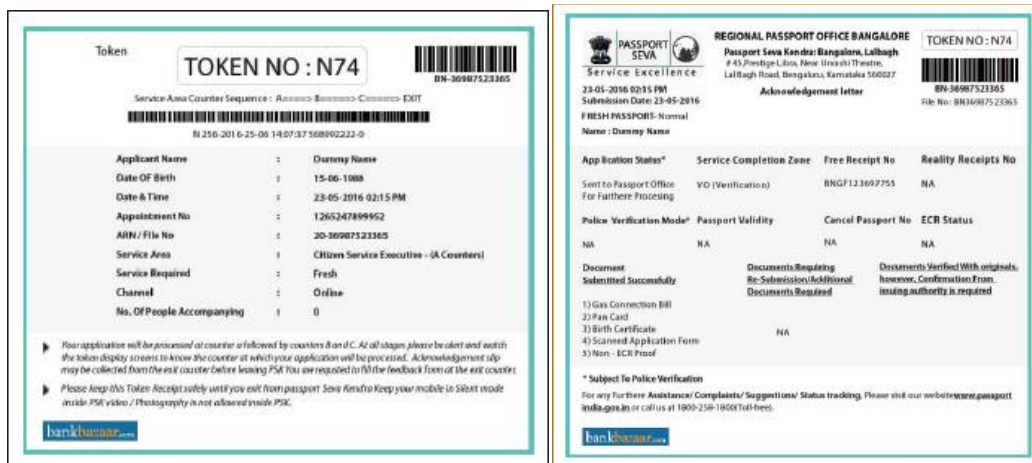
### SECTION - C

**Q. 5: Case Study: Excelling Services at PSK(Passport Seva Kendra)**

The Consular, Passport and Visa (CPV) Division of the Ministry of External Affairs (MEA), Government of India, issue passports in India. They provided passport services through the Central Passport Organization (CPO) and its network of passport offices and PSKs. A system consisting of headquarters of CPV division, 37 passport offices and 93 PSKs, which served as extended arms of passport offices, facilitate passport issuance. For overseas Indians and foreign nationals, the CPV services housed at Indian Missions and Posts abroad provide passport and visa issuance services. To improve passport service delivery to Indian citizens, the MEA, Government of India, decided to launch the Passport Seva Project (PSP) in May 2010. The PSP was implemented in a Public–Private Partnership (PPP) mode in collaboration with Tata Consultancy Services (TCS), which was selected through a public competitive procurement process. The TCS team had to handle office networking, core passport applications and the citizen portal. They were also charged to set up and manage the data centre and disaster recovery operations. However, strategic control of core assets, including data the sovereign and fiduciary functions such as verification, granting and issuing of the passport remain with Government. PSK was also integrated with the state police for physical verification of applicant’s credentials and with India Post for the delivery of passports. The process of passport interactions at PSK consisted of five steps (The detailed operation of PSK passport processing is given below:



TCS executives do the pre-processing task and the verification at Counter A. The MEA officials of the passport office do the verification at Counter B and granting of passport at Counter C. A token issued in the pre-processing area and provides receipt after completion of passport granting process at Counter (Sample given below)



**Key highlights of passport issuance operation:**

PSK has highlighted the vision on website ‘To deliver passport services to citizens in a timely, transparent, more accessible, reliable manner and in a comfortable environment through streamlined processes and committed, trained and motivated workforce’. The key highlights of passport issuance operation:

- Passport Seva Online portal to schedule the appointment which is user-friendly website and features such as appointment tracker and national call centre number. Citizen are required to reach the PSK 15 minutes before the schedule appoint time.
- People are required to sit in the waiting area if they reach early as entry is restricted to prevent queuing in the pre-processing area.
- Interactions in Pre-processing Area: This area has parallel counters with separate counter for senior citizens and tatkaal passport applications.
- Counter in Zone A: Executives are checking the documents carefully, scanning them and storing them for their records, clicking the applicant's picture and gathering biometric data. The whole process of checking the documents does not take more than 5–6 minutes. It has facility of water cooler and an outlet of Café Coffee Day selling eatables.
- Counter in B Zone: there are counters and an additional counter of the Assistant Passport Officer (APO) where verification of documents take place.

### **Challenges at PSK impacting operations and citizens experience:**

- In some PSK, the waiting area is small outside, with just few chairs and lack of toilets, drinking water, and parking. However, the waiting area in Pre-Processing area is air-conditioned to make people comfortable.
- Counter 'A', sometimes documents are blindly scanned and other times extending the online appointment date to a week instead of a day in case of issues in the document.
- At few PSK's, there is menace of passport agents and difficulty in getting online appointment.
- Citizens have also complained about harassment of verification officers (VOs). Passport officials of the MEA keep rejecting his/her application for want of some document or the other.
- The applicant sometimes is sent back, three, four, or five times on pretext of demanding of some document or the other.
- At some instances, few functional counters at Zone B, the executives frequently left their desks, further reducing the number of operational counters on and off.
- There have been several complaints of TCS personnel in Counter A, being very raw and lacking professional training.
- There is no Citizen charter i.e. time frame for the passport process and grievances cell for complaints and suggestion

### **Questions**

Q5(A): Provide a detailed understanding of the challenge faced by Citizens at PSK? What according to you were the major process challenges and bottleneck? (CO4)

Q5(B): How technology influenced the success of passport making at PSK? What are your suggestions to improve the service operation at PSK to enhance the service experience? (CO4)

### **Mapping of Questions with Course Outcome**

<b>Question Number</b>	<b>COs</b>	<b>Marks Allocated</b>
Q. 1:	CO1	5
Q. 2:	CO2	7
Q. 3:	CO3	7
Q. 4:	CO3	7
Q. 5:	CO4	14