**Operations Research**

**April 2023 Examination**

**1. Discuss the various categories of OR models and support the explanation with some examples. (Assume various details accordingly.) (10 Marks)**

**Ans 1.**

**Introduction**

OR stands for operations studies and may be described as an area in which humans use engineering and mathematical methods to assess optimizing troubles in business and control, pc science, economics, business engineering, civil engineering, and many others.

Operations research is a look that provides those who deal with prepared structures with a quantitative foundation or purpose for selection. Its objective is to control the performance of prepared systems taken completely rather than on their parts taken one by one. It is also done using teams of engineers and scientists drawn from unique disciplines. Therefore, OR is not a

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**2. Discuss various steps adopted in OR implementation and also state the limitations faced by an operations manager while implementing OR tools. (10 Marks)**

**Ans 2.**

**Introduction**

Functional studies may be defined because of the use of qualitative and quantitative models to resource decision-making in complicated implementation problems. The techniques and methods of operations research have been used inside the healthcare area since the 1950s in particular areas along with emergency medicine and the interface among network and acute care, scheduling and management of affected person home visits, health facility performance, scheduling of patient appointments and different complex implementation issues of a

**3. There is a rocket launch scheduled by XYZ space technology. Following table depicts various activities and durations of a Rocket Launch. As a project manager, it is necessary to identify total duration of the project, critical activities of project.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Activity** | **A** | **B** | **C** | **C** | **D** | **D** | **E** |
| **Predecessor****activity** | **-** | **A** | **B** | **A** | **B** | **C** | **D** |
| **Duration** | **-** | **15** | **10** | **30** | **12** | **11** | **18** |

**a. Draw the network diagram for the rocket launch. (5 Marks)**

**Ans 3a.**

**Introduction**

A challenge manager may be described as a professional in task control. Mission managers are responsible for procuring, planning, and executing a project in any assignment with a specific and defined scope, defining the finish and the start, regardless of the sector. Undertaking managers are the first factor of touch for any issues, issues, or discrepancies

**b. Find the critical path of the project. Find the minimum total duration needed for a project to complete. (5 Marks)**

**Ans 3b.**

**Introduction**

To complete a mission, we must go through and perform all of the activities that compose it. Various activities can be performed simultaneously, but some should be done in a particular order. As an example- If we're going to construct a building, we must first build the walls