**POORNIMA UNIVERSITY, JAIPUR**

**END SEMESTER EXAMINATION, April 2023**

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|  | **3BT6120** | Roll No. | Total Printed Pages: 2 |
| **3BT6120** |  |
| B. Tech. III Year VI- Semester (Back) End Semester Examination, April 2023  **(CV)** | |
| **BCV06104 : Remote Sensing & GIS** | | | |

# Max. Time: **3** Hours. Max. Marks: **60**

Min. Passing Marks: **21**

Attempt **five** questions selecting one question from each Unit. There is internal choice from Unit I to Unit V. Marks of each question or its parts are indicated against each question / parts. Draw neat sketches wherever necessary to illustrate the answer. Assume missing data suitably (if any) and clearly indicate the same in the answer.

Use of following supporting material is permitted during examination for this subject.

# **1.----------------------------------------------** **2.-----------------------------------------**

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|  |  | **UNIT-I (CO1)** | **Marks** | **Bloom Level** |
| **Q.1** | **(a)** | State reasons for overlaps in photogrammetry and list factors affecting selection of flying altitude. Also briefly discuss flight planning for aerial photogrammetry. | **(6)** | **Understand** |
|  |  |  |  |  |
|  | **(b)** | Write precautionary measures to be taken during flight planning for aerial photography. | **(6)** | **Understand** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.2** | **(a)** | Write short notes on following   1. Geometric distortions in aerial photos 2. Relief displacement with diagram   (iii) Stereoscope  (IV) Principal Point | **(6)** | **Remember** |
|  |  |  |  |  |
|  | **(b)** | Discuss the development of Photogrammetry and its uses in day-to-day life. | **(6)** | **Understand** |
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|  |  | **UNIT-II (CO2)** |  |  |
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| **Q.3** | **(a)** | Describe the electromagnetic radiation and also draw the figure of electromagnetic radiation interaction with vegetation, aerosol and earth surface. | **(6)** | **Apply** |
|  |  |  |  |  |
|  | **(b)** | What is scattering? Describe selective and non-selective scattering with suitable examples. | **(6)** | **Understand** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.4** | **(a)** | What is spectral signature? Describe importance of atmospheric windows in remote sensing. | **(6)** | **Remember** |
|  |  |  |  |  |
|  | **(b)** | Write Short Notes on the following:  (i) Plank’s Law (ii) Transmittance  (iii) Radiance (iv) Spectral Reflectance and albedo | **(6)** | **Understand** |
|  |  |  |  |  |
|  |  | **UNIT-III (CO3)** |  |  |
|  |  |  |  |  |
| **Q.5** | **(a)** | Write short notes on following  **a.** Sun synchronous and geosynchronous satellite with suitable examples.  **b.** Microwave Remote Sensing and its application | **(6)** | **Apply** |
|  |  |  |  |  |
|  | **(b)** | What are the sensors and explain various characteristic of sensors with examples of IRS satellite. | **(6)** | **Understand** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
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| **Q.6** | **(a)** | Classify the satellites on the basis of their orbit and purpose with suitable example. | **(6)** | **Understand** |
|  |  |  |  |  |
|  | **(b)** | Describe the IRS series Satellite and Sensors details with complete details of sensor properties. | **(6)** | **Understand** |
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|  |  | **UNIT-IV (CO4)** |  |  |
|  |  |  |  |  |
| **Q.7** | **(a)** | Why GIS is known as very powerful tool to solve complex problems? Discuss with suitable examples. | **(6)** | **Evaluate** |
|  |  |  |  |  |
|  | **(b)** | What are the different types of spatial data used in GIS? Give three advantages and disadvantages of each type of data. | **(6)** | **Understand** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.8** | **(a)** | What is Raster and vector data base? Also differentiate raster and vector database with suitable examples | **(6)** | **Understand** |
|  |  |  |  |  |
|  | **(b)** | How projection plays important role in GIS? Discuss different types of projection with near diagram. | **(6)** | **Apply** |
|  |  |  |  |  |
|  |  | **UNIT V (CO5)** |  |  |
|  |  |  |  |  |
| **Q.9** | **(a)** | Explain how GIS and Remote Sensing can be used for identifying the sites for artificial recharge structures. | **(6)** | **Apply** |
|  |  |  |  |  |
|  | **(b)** | Write short notes on following  **a.** GIS application in Smart City Planning **b.** GIS in Natural Resources Management | **(6)** | **Understand** |
|  |  |  |  |  |
|  |  | **OR** |  |  |
|  |  |  |  |  |
| **Q.10** | **(a)** | How we do the image classification? Discuss the advantages and disadvantages of each classification in detail. | **(6)** | **Understand** |
|  |  |  |  |  |
|  | **(b)** | Explain and draw the methodological framework of application of remote sensing and GIS in transportation planning | **(6)** | **Apply** |