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**Presidency University**

**Bengaluru**

 **SCHOOL OF ENGINEERING**

**MAKE UP EXAMINATION JULY 2024**

**Date**: 2nd July 2024

**Time**: 9:30 AM to 12:30pm

**Max Marks**: 100

**Weightage**:50%

**Semester:** V

**Course Code**: CIV3024

**Course Name**: Remote Sensing and Geographical Information System

**Program:** B.Tech.

 **Instructions:**

1. *Read the question properly and answer accordingly.*
2. *Question paper consists of 3 parts.*
3. *Scientific and Non-programmable calculators are permitted.*

**Part A [Memory Recall Questions]**

**Answer any 12 Questions. Each question carries Two marks. (12Qx 2M= 24M)**

1. In visible regions, the blue light has a wavelength range of?

1. 0.42-0.52 micrometer
2. 0.42-0.92 micrometer
3. 0.24-0.52 micrometer
4. 0.22-0.32 micrometer (C.O.No.1) [Knowledge]

2. The system that uses the Sun as a source of electromagnetic energy and records the naturally radiated and reflected energy from the object is called.

a. Active Remote Sensing

b. Passive Remote Sensing

c. Global positioning system

d. Geographic Information system

(C.O.No.1) [Knowledge]

3. The purpose of georeferencing is to?

1. Converting data to a feature class
2. Projecting your data so that it has no distortion
3. Combining two data set
4. Assigning geographic location information

(C.O.No.2) [Knowledge]

4. Determine the scale of the map if the distance on the map is given as 2 cm which is equal to 1 km of the ground.

 a. 1:50000

 b. 1:5000

 c. 1:100000

 d. 1:500

(C.O.No.2) [Knowledge]

5. A map projection that shows an area between latitude and longitude equal in size to the area on the globe is known as

1. Cylindrical projection
2. Conic projection
3. Azimuthal projection
4. Equal-Area projection

(C.O.No.3) [Knowledge]

6. Pick up the correct statement from the following:

1. In remote sensing technique, the observation place, is called a platform
2. Platforms may be either stationary or mobile
3. Spatial resolution of the imaging system becomes poorer with increase of platform height
4. All of these

(C.O.No.3) [Knowledge]

7. Which one of the following helps to identify the objects on the earth’s surface?

1. Atmospheric window
2. Signature
3. Radiometric error
4. None of these

8. Which of the following field is used by the EM waves;

a. Solar field

b. Polarized field

c. Electrified field

d. Micro field

(C.O.No.3) [Knowledge]

9. Polar orbiting satellites are generally placed at an altitude range of;

a. 7 – 15km

b. 70 – 150km

c. 700 – 1500km

d. 7000 – 150000km

(C.O.No.4) [Knowledge]

10. Electromagnetic spectrum contains;

a. Gamma rays (wavelength <10-10 m)

b. Ultraviolet rays (wavelength <10-6 m)

c. Infrared rays (wavelength <10-4 m)

d. All of the above

(C.O.No.4) [Knowledge]

11. The cadastral maps, topographical maps and the city plans come under the category of

1. Large scale maps
2. Small scale maps
3. Medium scale maps
4. All of the above

(C.O.No.4) [Knowledge]

12. The scientist Roger Tomlinson who coined GIS was given \_\_\_\_\_\_ title.

1. Father of GIS
2. Father of Globe
3. Doctorate
4. None of the above

(C.O.No.4) [Knowledge]

13. Three basic kinds of vector entities are:

 a. Point, Raster, Attributes b. Image, Raster, Polygon

 c. Point, Line/Polyline, Polygon d. Polyline, Polygon, Raster

14. Which of the following are true?

 a. Digitizing is defined as converting aerial photographs into maps

 b. A keyboard cannot be used to digitize maps, only to enter attribute information

 c. Digitizing from a tablet involves using a template

 d. Digitizing involves tracing map features into a computer

**Part B [Thought Provoking Questions]**

**Answer any three Questions. Each question carries 12 marks. (3Qx12M=36M)**

15.These systems consist of a number ofelements. The elements range from solar radiation to the application of imageries for public problems, through various stages. Explain the elements in Remote Sensing with neat sketch.

(C.O.No.2) [Comprehension]

16.The foundation of remote sensing technology is based on the measurement and interpretation of the patterns of EMR. It is a dynamic form of energy. EMR transmit cross space in the wave form and in the speed of light. The whole range of EMR is called spectrum. What are the various types of electromagnetic radiation?

(C.O.No.3) [Comprehension]

17.The RADARSAT project consisted of collaboration between the Canadian federal government and provinces, the United States, and the private sector. The goal of this project was to produce a satellite for earth observation by way of a Synthetic Aperture Radar, which is an advanced radar sensor and powerful microwave instrument capable of producing high quality images of the Earth during day or night and across a wide range of weather conditions including cloud cover, smoke, and haze. Explain the orbital and characteristics of Radarsat and some applications?

18. Explain the components of GIS with a neat diagram?

(C.O.No.4) [Comprehension]

**Part C [Problem Solving Questions]**

**Answer any two Questions. Each question carries Twenty marks (2Qx20M=40M)**

19.Image interpretation of remote sensing data is to extract qualitative and quantitative information from the photograph or imagery. It involves identification of various objects on the terrain which may be natural or artificial consisting of points, lines, or polygons. It depends on the way how different features reflect or emits the incident electromagnetic radiation and their recording by a camera or sensor. Explain various elements involved in Remote Sensing?

 (C.O.No.3) [Comprehension]

20.In February 2019, huge forest fires broke out in numerous places across the Bandipur National Park of the Karnataka state in India. How do analyze the Forest fire damage evaluation using remote sensing and GIS techniques.

(C.O.No.4) [Comprehension]

21. The Chennai-Bangalore Industrial Corridor Project is an upcoming mega infrastructure project of Government of India. The corridor plans to come up along Chennai, Sriperumbudur, Ponnapanthangal, Ranipet, Suburbans of Vellore, Chittoor, Bangarupalem, Palamaner, Bangarpet, Hoskote and Bangalore. Describe the use of remote sensing methods and GIS techniques is used in this project..

(C.O.No.4) [Comprehension]