

II/IV B. Tech. DEGREE EXAMINATION
• **Geo-Informatics Engineering**
First Semester
FUNDAMENTALS OF ATMOSPHERIC SYSTEMS
(Effective from the admitted batch of 2021-22)

Time: 3 hours

Max. Marks: 70 M

*Question No. 1 is compulsory.
Answer any Four from the remaining.
All questions carry equal marks.*

- 1) (a) Explain insolation.
(b) Explain the classification of fronts
(c) Explain burst of monsoon.
(d) What are tornadoes?
(e) Define lapse rate and temperature inversion?
(f) Explain about pressure gradient
(g) Write about jet stream
- 2) (a) Briefly explain the heat budget of the earth's atmospheric system.
(b) Explain about origin, composition, and structure of the atmosphere.
- 3) (a) What are the factors affecting the velocity and direction of wind in the atmosphere.
(b) Write the salient features of general circulation of the atmosphere.
- 4) (a) Explain about potential evapo transpiration and factors affecting evaporation.
(b) Explain in detail the economic importance of monsoon in India.
- 5) (a) Explain in detail about air mass and its classification.
(b) Explain about origin, classification and distribution of thunderstorms.
- 6) (a) Explain about types of weather forecast and methods of weather forecasting.
(b) Explain the effects of climate changes in agriculture.
- 7) (a) Discuss the latitudinal shifting of wind belts.
(b) Write briefly the instruments for wind observation and measurement.
- 8) (a) Explain briefly the formation and classification of clouds.
(b) Discuss the horizontal and vertical distribution of temperature.

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II IV B. Tech. DEGREE EXAMINATION
Geo-Informatics Engineering
: : First Semester
Fundamentals of Geology
(Effective from the admitted batch of 2021-22)

Time: 3 hours

Max. Marks: 70 Marks

*Question No. 1 is compulsory.
Answer any Four from the remaining.
All questions carry equal marks.*

1.
 - (a) Define isostasy
 - (b) Define the crust and the sublayers of the crust.
 - (c) What are the different forms of sedimentary rocks?
 - (d) Name different types of folds.
 - (e) Give any four uses of brunton compass.
 - (f) Why is it necessary to undertake the geophysical investigations before construction ?
 - (g) Write about the gondwana super group.
2.
 - (a) Explain about plate tectonics and continental drift theory.
 - (b) Write in detail about the classification of minerals.
3.
 - (a) Write the textures of igneous rock and explain them.
 - (b) Explain about the structure of metamorphic rocks.
4.
 - (a) Describe the physical properties of Pyroxene group of minerals.
 - (b) What is fault? Describe various types of faults with diagrams.
5.
 - (a) Write a short note on the joints and unconformities.
 - (b) Give the features of clinometer compass and write its uses.
6.
 - (a) Write about the principles of stratigraphy and explain it.
 - (b) Describe the cuddapah system.
7.
 - (a) Write a short note on the importance of geology in the development of civil engineering projects.
 - (b) What are the necessary geophysical investigations for the construction of roads dams reservoirs ?
8.
 - (a) Explain the Processes of ore mineral formations.
 - (b) What are the major stratigraphic divisions of india ?

MODEL PAPER

II/IV B.Tech DEGREE EXAMINATION

Second Semester

Geo Information Engineering

INFORMATION TECHNOLOGY AND APPLICATIONS

(With effective from the admitted batch of(2020-2021)

GI 2201

Time: 3 hours

Maximum: 70marks

Answer any FIVE question

First question is compulsory

Answer any FOUR from the remaining questions

All questions carry equal marks

1. Define the following
 - (a)What are the characteristics of flat panel displays
 - (b)Define Memory Unit?
 - (c)What is error detecting code?
 - (d)What is System Life Cycle?Explain stages of System Life Cycle
 - (e)What is Electronic Data Interchange?
 - (f)Explain LAN and WAN?
 - (g)Write a note on Google Map.
2. (a)Describe the basic components of a computer system and explain each component in detail.
(b)What is Computer Peripherals? Explain input devices?
3. (a)What are the types of computers? Classify them
(b)Write about MPEG compression standards
4. (a)Explain the process of acquiring and string image data
(b)Explain the basics of audio signals and discuss the process of acquiring an sorting audio signals
5. (a)What is Operating System? Explain types of Operating System
(b)Describe the features of ms-word and explain Power point?
6. (a)Differentiate between System Software and Application Software
(b)Write about information needs of an organization and its management structure.
- 7.(a)What are the Advantages and Disadvantages of E-commerce
(b)Explain about Business to Customer (B2C)and Business to Business(B2B)
- 8.(a)Explain the process of retrieving information from the Web.
(b)What are the naming computers connected to internet.

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2/6/22

GI 2104
II/IV B.Tech. DEGREE EXAMINATION
Geo-Informatics Engineering
First Semester

OBJECT ORIENTED PROGRAMMING THROUGH C++ AND JAVA
(Admitted batch 2021-22)

Time: 3 hours

Max. Marks: 70

Note : Question No.1 is compulsory.
Answer any FOUR from the remaining.
All questions carry equal marks. Answer all parts of any question at one place.

1. Answer the following: 7x2=14M
- A.) Define Object Oriented Programming. List out the features of OOPS.
 - B.) What is a class? How will you define a class.
 - C.) What is polymorphism? What are the types of polymorphism.
 - D.) What are the parameter passing techniques in C++.
 - E.) What is method overloading and method overriding.
 - F.) Define Multithreading? List out the advantages of Multithreading.
 - G.) Define Garbage Collection in JAVA.
2. A) List the features of JAVA programming language.
B) Describe the various access specifiers in C++. Illustrate with an example
3. A) Discuss about the different types of loops with example
B) Write a program to implement STACK operations in C++.
4. A) What is inheritance? What are the types and advantages of inheritance.
B) Explain the file pointers and their manipulations available in C++.
5. A) Explain the control statements with syntax in JAVA.
B) Explain the bit wise operators available in JAVA.
6. A) Explain the use of 'this' keyword and finalize() method with example in JAVA.
B) What are Packages in JAVA. Describe the types of Packages
7. A) What is an Interface? How can we achieve multiple inheritance by using Interface.
B) How the exceptions are handles in JAVA? What is the difference between error and exception.
8. A) Write a detailed note on JDBC connectivity.
B) Explain the life cycle of Applet. Distinguish between init() and start() method.

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GI 2101

II/IV B. Tech. DEGREE EXAMINATION
GEO - INFORMATICS ENGINEERING
 First Semester
GI 2101 PROBABILITY AND STATISTICS
 (Effective from the admitted batch of 2021-22)
Model Question Paper

Time: 3 hours

Max. Marks: 70 M

*Question No. 1 is compulsory.
 Answer any Four from the remaining.
 All questions carry equal marks.*

- 1) (a) State the axioms of probability. 7×2 = 14M
 (b) Determine the binomial distribution for which the mean is 4 and variance 3.
 (c) Define Correlation. Write any two properties of Correlation Coefficient.
 (d) Define Markov Chain.
 (e) What is Hazard function?
 (f) What do you mean by Analysis of Variance?
 (g) What are the advantages of Statistical Quality Control?

- 2) (a) A random Variable X has the following probability distribution.

X	-2	-1	0	1	2	3
$P(X = x)$	0.1	K	0.2	$2K$	0.3	$3K$

Find (i) K ,

(ii) Evaluate $P(-2 < X < 2)$,

(iii) Find the c.d.f of X and

(iv) Evaluate the mean of X .

- (b) State and Prove Chebychev's inequality.

- 3) (a) Show that mean and variance of Poisson distribution are equal.

- (b) A fair die is tossed 720 times. Use Chebychev's inequality to find a lower bound for the probability of getting 100 to 140 sixes.

- 4) (a) State and Prove Central Limit Theorem.

- (b) Calculate the Correlation Coefficient and obtain the lines of regression from the following data.

X	1	2	3	4	5	6	7	8	9
Y	9	8	10	12	11	13	14	16	15

- 5) (a) Explain about Classification of Random Process.
 (b) Discuss about Poisson Random Process.
- 6) Explain about Series and Parallel systems of reliability engineering and give some applications.
- 7) In a RBD three varieties of rice were tested in 4 blocks. The following table shows the yields obtained (in kgs)

		BLOCKS			
		B_1	B_2	B_3	B_4
VARIETIES	V_1	19	20	22	19
	V_2	16	18	13	23
	V_3	22	25	19	29

Perform the ANOVA and test whether the differences between varieties and blocks.

- 8) Explain about Control Charts and Types of Control Charts

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K. Yogender

MODEL PAPER

GI 1105 SURVEYING

(for batches 2022-23 onwards)

(1st year B.tech. – Geo INF)

Note : Answer Question no : 1 and answer any four from the rest.

1. a) State the basic principles of surveying
b) What is local attraction?
c) Mention any two advantages of Plane table surveying
d) What is reciprocal levelling?
e) Differentiate between open and closed traversing?
f) What is the function of subtense bar?
g) Mention different types of EDM's.

2. a) A steel tape 20 m long standardized at 25° C with a pull of 10 Kgf force was used for measuring a base line. Find the correction per tape length, if the temperature at the time of measurement was 40° C and the pull exerted was 16 Kgf. Weight of 1 cubic cm of steel = 7.86 g , weight of tape = 0.8 Kgf and Young's modulus of steel $E = 2 \times 10^6 \text{ Kg/cm}^2$, Coefficient of expansion of tape per 1° C = 9.2×10^{-6} .

b) Distinguish between Prismatic compass and Surveyor's compass

3. a) By means of a sketch explain the function of various components of a theodolite.

b) The following staff reading were observed successively with level, the instrument having been moved forward after the second, fourth and eighth readings:

0.875, 1.235, 2.310, 1.385, 2.930, 3.125, 4.125, 0.120, 1.875, 2.030, 3.765

The first reading was taken with the staff held upon a bench mark of elevation 132.135. Enter the readings in level book form and reduce the levels. Apply the usual checks. Also find the level difference between the first and the last points.

4. a) A tacheometer is set up at an intermediate point on a traverse course PQ and the following observations are made on a vertically held staff.

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Staff station	Vertical angle	Staff intercept	Axial hair readings
P	$+ 8^{\circ} 36'$	2.350	2.105
Q	$+ 6^{\circ} 6'$	2.055	1.895

The instrument is fitted with an anallatic lens and the constant is 100. Compute the length of PQ and reduced level of Q, that of P being 321.50 metres.

b) Explain the concepts of trigonometric levelling.

5. a) Explain the classification of triangulation systems with figures.

b) what is a contour and contour interval. Explain characteristics of contour.

6. a) Explain how do you measure horizontal angle, vertical angle, slope distance and vertical distance with the help of a total station.

b) Briefly Explain Global positioning system and Aerial photogrammetry.

7. a) Explain the various methods of Plane table surveying.

b) What is closing error and explain the Bowditch method of closing the traverse.

8. Write short notes on :

a) Obstacles in chain surveying

b) Errors in levelling

c) Principles of remote sensing

Prepared by -

Prof. P.Satyanarayana

