

2018

M.Sc. 1st Seme. Examination

REMOTE SENSING & GIS

PAPER—RSG-104

Full Marks : 40

Time : 2 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

RSG—104.1

Computer Basics and Programming Languages

[Marks : 20]

Group-A

Answer any two questions :

2×2

1. What is Base or Radix of a number system ?
2. Discuss any two generations of Computer System.
3. What do you mean header file in C ?
4. Why C language is called as a high level programming language ?

(Turn Over)

Group-B

Answer any *two* questions : 2×4

5. (a) Determine the binary equivalent of $(37)_{10}$.
(b) Determine the decimal equivalent of $(110111)_2$. 2+2
6. Discuss the important features and uses of mainframe and super computer. 2+2
7. Write all the arithmetic and relational operators in C language. 2+2
8. Write the basic structure of C program.

Group-C

Answer any *one* question : 1×8

9. (a) State the functions and syntax of printf and scanf.
(b) Explain the use of for and while loop in C-programming.
10. (a) Write a program in C to check whether a year is leap year or not.
(b) Write a program in C to find whether a given number is odd or even. 4+4

RSG—104.2**Probability and Statistics****[Marks : 20]****Group-A**Answer any *two* questions : 2×2

1. Calculate mean, median, mode with the following data :
2, 4, 7, 8, 10, 12, 13, 6, 10, 7, 12, 12, 13, 12, 16.
2. With the data in question 1, calculate variance and standard deviation. Variance indicates (i) data spread or (ii) data pattern ?
3. Draw and explain Kurtosis and Skewness.
4. Write the characteristics of standard deviation.

Group-BAnswer any *two* questions : 2×4

5. Write the formula of conditional probability. What is the probability of getting 5 in a diceroll ? What is the probability of getting 2 given that the outcomes are even numbers ?
6. Suppose a call centre receives 40 calls in an hour. What is the probability that no call is received within a 5 minutes period ? What is the probability that more than 10 calls is received in a 5 minutes period.

7. An airline knows 5% of the people making reservations do not turn up for the flight. So, it sells 62 tickets for a 60 seat flight. What is the probability that every passenger who turns up will get a seat.
8. Write the formula of Poisson distribution. Suppose customers arrives in a mall at the rate of 5 per minute. What is the probability that no customer came in 1 minute? What is the probability that 4 customer comes in a 4 minute period.

Group-C

Answer any *one* question :

1×8

9. Write the formula of normal distribution. Calculate the probability of x being in a range of 50 to 70 and 40 to 80 when the mean is 60 and S.D. is 10.
Calculate the probability of x being less than 60 and greater than 60.
10. Write Baye's theorem.
Suppose a computer manufacturer purchase ICs from suppliers B_1 , B_2 and B_3 with 40% from B_1 , 30% from B_2 and 30% from B_3 . Suppose 1% of the supply from B_1 , 5% from B_2 and 10% from B_3 is defective. What is the probability that a randomly selected IC from the manufactor stock is defective. If a IC is randomly selected from stock, then what is the probability that it was supplied by B_1 or B_2 or B_3 .