20100226

QP CODE: 20100226

Reg No : .....

Name : .....

BSc DEGREE (CBCS) EXAMINATION, FEBRUARY 2020

Fifth Semester

Core Course - MM5CRT04 - ENVIRONMENTAL MATHEMATICS & HUMAN RIGHTS

B.Sc Mathematics Model I,B.Sc Mathematics Model II Computer Science

2017 Admission Onwards

EF5B5DA9

Time: 3 Hours Maximum Marks :80

Part A

*Answer any **ten** questions.*

*Each question carries **2** marks.*

1. What do you mean by forest resources?
2. What is a balanced diet?
3. What do you mean by conservation of natural resources?
4. What do you mean by ground water pollution?
5. What do you mean by Environment Impact Assesment?
6. What are the remedies to problems due to climate change?
7. Find (2076, 1076).
8. State Lame's theorem .
9. Prove that $\alpha = 1 + \frac{1}{\alpha}$.
10. Write any two examples where golden ration is found in the human body.
11. What do you mean by human rights? Write its characteristics.
12. Describe the function of committee on the elimination of discrimination against women.

(10×2=20)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. What are the problems of excessive use of ground water?

14. What are the effects of mineral extraction on environment?

15. What are the sources of air pollution? Explain the effects of air pollution on living organisms.

16. What are the effects of thermal pollution?

17. Explain Rabbit Problem.

18. Explain the relation between Fibonacci numbers and Beehive.

19. Explain Newton's method of generating the Golden ratio

20. How do we relate centroids of circles and Golden ratio?

21. Describe how India maintain the human rights for minorities.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **15** marks.*

22. Explain in detail Forest Conservation Act.

23. a) Let γ and δ be the distinct solutions of the equation $x^2 - ax - b = 0$, where $a, b \in R$ and $b \neq 0$.
Then every solution of the LHRRWCC
$a_n = a\, a_{n-1} + b\, a_{n-2}$ where $a_0 = C_0$ and $a_1 = C_1$ is of the form $a_n = A\, \gamma^n + B\, \delta^n$ for some constants A and B

b) Solve $a_n = a_{n-1} + 2\, a_{n-2}$ with $a_0 = 3$, $a_1 = 0$

24.
1. How do we relate golden ration to differential equations?
2. Solve the equation $f^{-1}(x) = f^m(x)$, using Gattei's theory.

25. Describe the human rights co-ordination within UN system.

(2×15=30)