QP CODE: 21101772

21101772

Reg No : .....

Name : .....

B.Sc DEGREE (CBCS) SPECIAL SUPPLEMENTARY EXAMINATION, JULY 2021

Fifth Semester

CORE COURSE - MM5CRT04 - ENVIRONMENTAL MATHEMATICS & HUMAN RIGHTS

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

2018 Admission Only

8A8CCA1B

Time: 3 Hours

Max. Marks : 80

Part A

*Answer any **ten** questions.*

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

1. What is salinity?
2. What are the consequences of exploitation of mineral resources?
3. What is nulear fission?
4. What are primary and secondary pollution?
5. Explain any two causes of thermal pollution.
6. What do you mean by environmental ethics?
7. How Fibonacci numbers and scale patterns of pine cones are related?
8. Find (1976 , 1776)
9. Does there exist a real function f such that $f'(x) = f^{-1}(x)$?
10. Let A and B be two circles tangential at the point O. How are their radii related to golden ratio?
11. Describe the value dimensions of human rights.
12. Describe how the committee on economic, social and cultural rights functions.

(10×2=20)

Part B

*Answer any **six** questions.*

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

13. What are the uses of forest resources?

14. What are the effects of agriculture on the environment?

15. What do you mean by water pollution? What are the causes of water pollution?

16. Write a short note on elements of disaster management.

17. Verify that $L_n = F_{n-1} + F_{n+1}$, for n = 4 and n = 10.

18. Prove that $\sum_{i=1}^{n} F_i^2 = F_n F_{n+1}$ where F_i's are Fibonacci numbers.

19. Discuss about Euler's construction of Golden ratio.

20. Illustrate the occurence of Golden ratio in Origami.

21. Write some examples for violation of economic, social or cultural rights?

(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 $a_n = 5\,a_{n-1} - 6\,a_{n-2}$ with $a_0 = 4$, $a_1 = 7$

24. 1.Explain the geometrical interpretation of mean proportional.
2.Let C divide the line segment AB in the Golden ratio, where AB=1 and AC=t. Find the quadratic equation satisfied by t and solve it.

25. Describe the fundamental rights included in the constitution of India.

(2×15=30)

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