

24.07.19

T.T Maths

Time: 45 Mins

STD: XII (A,C)

Marks:30

I. Choose the correct answer:

5x1=5

1. A zero of x^3+64 is 1) 0 2) 4 3) 4i 4) -42. If α , β and γ are the zeros of x^3+px^2+qx+r , then $\sum \frac{1}{\alpha}$ is1) $\frac{-q}{r}$ 2) $\frac{-p}{r}$ 3) $\frac{q}{r}$ 4) $\frac{-q}{p}$ 3. The number of positive zeros of the polynomial $\sum_{j=0}^n nC_r (-1)^r x^r$ is 1) 0 2) n 3) $<n$ 4) r4. The polynomial x^3+2x+3 has1) one negative and two imaginary zeros
2) one positive and imaginary zeros
3) three real zeros 4) no zeros5. The polynomial x^3-kx^2+9x has three real zeros if and only if, k satisfies 1) $|k| \leq 6$ 2) $k=0$ 3) $|k| > 6$ 4) $|k| \geq 6$

II. Answer any 3 of the following: 3x2=6

6. Find a polynomial equation of minimum degree with rational coefficients, having $2+\sqrt{3}i$ as a root.

7. Construct a cubic equation with roots 2,3,4.

8. If $x^2+2(k+2)x+9k=0$ has equal roots, find k.9. If α , β and γ are the roots of the equation $x^3+px^2+qx+r=0$ then find the value of $\sum \frac{1}{\beta\gamma}$ in terms of the coefficients.

III. Answer any 3 of the following: 3x3=9

10. If the sides of a cubic box are increased by 1,2,3 units respectively to form a cuboid, then the volume is increased by 52 cu.units. Find the volume of the cuboid.

11. Find the sum of the squares of roots of the equation $2x^4-8x^3+6x^2-3=0$

12. Prove that a line cannot intersect a circle at more than two points.

13. If p and q are the roots of the equations $lx^2+nx+n=0$, show that $\sqrt{\frac{p}{q}} + \sqrt{\frac{q}{p}} + \sqrt{\frac{n}{l}}=0$

IV. Answer any 2 of the following: 2x5=10

14. If the equation $x^2+px+q=0$ and $x^2+p'x+q'=0$ have a common root, show that it must be equal to $\frac{pq^1-p^1q}{q-q^1}$ or $\frac{q-q^1}{p^1-p}$ 15. Solve the equation $x^3-9x^2+14x+24=0$ if it is given that two of its roots are in the ratio 3:2.16. If α and β are the roots of the quadratic equation $17x^2+43x-73=0$, construct a quadratic equation whose roots are $\alpha+2$ and $\beta+2$.

24.07.19

T.T Computer Science

Time: 45 Mins

STD: XII (B,D,E)

Marks:30

I. Answer any 4 of the following:

4x2=8

1. What are the main advantages of function?

2. What is base condition in recursive function?

3. What is meant by scope of variable? Mention its types.

4. How to pass parameters in function?

5. Write the output for the following function

i) abs (-25+12.0) ii) pow (2, 3)

II. Answer any 4 of the following:

4x3=12

6. Write the output for the following statement.

i) print ("PYTHON".lower())

ii) print ("Python".is lower())

iii) print ("Python". is upper())

iv) print ("Python".upper())

7. Write a note on i) is alnum() ii) is alpha() iii) is digit()

8. Differentiate ceil() and floor() function.

9. Write the basic rules for local and global variable in python.

10. What is composition in functions?

III. Answer any 2 in detail:

5x2=10

11. Write a program to create a mirror of the given string. For example, "Wel"= "leW"?

12. Explain the different types of function with an example.

13. Explain about string operators in python with suitable example.

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24.07.19 T.T Economics Time: 45 Mins
 STD: XII (F,G) Marks:30
 I. Choose the correct answer: 5x1=5

1. As income increases, consumption will _____.
 a) fall b) not change c) fluctuate d) increase
 2. The term MEC was introduced by _____.
 a) Smith b) Keynes c) Ricardo d) Malthus
 3. The formula for leverage effect _____.
 a) $Y=C_A+I+I_P$ b) $Y=C+I_A+I_P$ c) $I=Y+C_A+C_P$ d) $C=Y_A+Y_P+I$
 4. The concept of multiplier was first developed by _____.
 a) J.S.Mill b) R.F.Khan c) Marshall d) Duesenberry
 5. The classical economists believed that investment depend on
 a) interest b) demand c) price d) rate of interest
- II. Answer the following: 5x3=15
6. Differentiate autonomous and induced investment.
 7. Mention the differences between accelerator and multiplier effect.
 8. State the concept of super multiplier.
 9. Specify the limitations of the multiplier.
 10. Explain any three objectives factor of consumption function.
- III. Answer the following: 2x5=10
11. What are the differences between MEC and MEI.
 12. Briefly explain the subjective factor of consumption function.

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24.07.19 T.T Commerce Time: 45 Mins
 STD: XII (H,I,J) Marks:30

- I. Answer the following:
1. Expand SEBI and write short notes of SEBI. (3 Marks)
 2. Mention the head quarters of SEBI. (3 Marks)
 3. Write any 2 objectives of SEBI. (4 Marks)
- II. Answer the following: 2x5=10
4. What are the documents required for demat account?
 5. What is meant by Dematerialization?

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24.07.19 T.T Biology Time: 45 Mins
 STD: XII (B,D,E) Bio-Botany Marks:30

I. Answer any 5 of the following: 5x2=10

1. Define Bioventing.
 2. Write the advantages and disadvantages of Bt cotton.
 3. Write the benefits and risk of Genetically modified foods.
 4. Name the fungal organisms used as sep.
 5. Differentiate Exonuclease and Endonuclease.
 6. What are cosmids?
 7. What is algal biofuel?
- II. Answer any 1 in detail: 1x5=5
8. What is the purpose of Green Fluorescent protein?
 9. Explain the replica plating technique.

Bio-Zoology

I. Answer any 2 of the following: 2x2=4

1. What is meant by non overlapping codon?
 2. What is a Histone and what are the types involved in packaging of DNA?
 3. What is meant by Transposons give its significance?
- II. Answer any 2 of the following: 2x3=6
4. Write a note on any three important feature of a genetic code.
 5. Write a note on the codon change which cause sickle cell anaemia.
 6. What is meant by Nucleosome?

III. Answer any one in detail: 1x5=5

7. Write a note on Prokaryotic Replication and the enzymes involved in replication and their role.
8. Write a note on Prokaryotic Transcription in detail with diagram.