

UG-AS-306	BSCSSA-11/ BCASA -11
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U.G. DEGREE EXAMINATION - JULY, 2022

Computer Science/Computer Applications

(From CY – 2020 onwards)

First Semester

MATHEMATICS – I

Time : 3 hours

Maximum marks : 70

PART A — (3 × 3 = 9 marks)

Answer any THREE questions out of Five questions in
100 words.

All questions carry equal marks.

1. If the Eigenvalues of A are of order 3×3 are 2, 3 and 1, then find the eigenvalues of adjoint of A .
2. If $y = \sqrt{(\sin x + \sqrt{\sin x + \sqrt{\sin x \dots}} \text{ to infinity})}$,
find $\frac{dy}{dx}$.

3. Form the partial differential equation by eliminating a and b from $z = (x^2 + a^2)(y^2 + b^2)$.
4. Define Fourier series.
5. A firm manufactures two types of products A and B and sells them at a profit of Rs. 2 on type A and Rs. 3 on type B . Each product is processed on two machines M_1 and M_2 . Type A requires 1 minute of processing time on M_1 and 2 minutes on M_2 . Type B requires 1 minute on M_1 and 1 minute on M_2 . Machine M_1 is available for not more than 6 hours 40 minutes while machine M_2 is available for 10 hours during any working day. Formulate the problem as a LPP so as to maximize the profit.

PART B — ($3 \times 7 = 21$ marks)

Answer any THREE questions out of Five questions
in 200 words.

All questions carry equal marks.

6. Verify Cayley — Hamilton theorem and find A^4
when $A = \begin{bmatrix} 2 & -1 & 2 \\ -1 & 2 & -1 \\ 1 & -1 & 2 \end{bmatrix}$.

7. Evaluate $\int \frac{dx}{(x+1)\sqrt{x^2+x+1}}$.
8. Find the singular solution of the equation $z = px + qy + p^2 + pq + q^2$.
9. Find the half-range Fourier cosine series for $f(x) = x$ in $(0, \pi)$.
10. Solve the following L.P.P by the graphical method

$$\text{Maximize } Z = 3x_1 + 2x_2$$

Subject to

$$-2x_1 + x_2 \leq 1$$

$$x_1 \leq 2$$

$$x_1 + x_2 \leq 3 \text{ and}$$

$$x_1, x_2 \geq 0$$

PART C — (4 × 10 = 40 marks)

Answer any FOUR questions out of Seven questions in 500 words.

All questions carry equal marks.

11. Find all the Eigenvalues and Eigenvectors of the

$$\text{matrix } \begin{bmatrix} -2 & 2 & -3 \\ 2 & 1 & -6 \\ -1 & -2 & 0 \end{bmatrix}.$$

12. If $y = \sin(m \sin^{-1} x)$, prove that
 $(1 - x^2)y_2 - xy_1 + m^2y = 0$ and
 $(1 - x^2)y_{n+2} - (2n + 1)xy_{n+1} + (m^2 - n^2)y_n = 0$.

13. Find the general solution of
 $(mz - ny)p + (nx - lz)q = ly - mx$.

14. Find the Fourier series for the function $f(x) = x^2$,
 $-\pi < x < \pi$, show that

$$\frac{1}{1^2} + \frac{1}{2^2} + \frac{1}{3^2} + \frac{1}{4^2} + \dots = \frac{\pi^2}{6}.$$

15. Use simplex method to solve the LPP

$$\text{Maximize } Z = 4x_1 + 10x_2$$

Subject to

$$2x_1 + x_2 \leq 50$$

$$2x_1 + 5x_2 \leq 100$$

$$2x_1 + 3x_2 \leq 90 \text{ and}$$

$$x_1, x_2 \geq 0$$

16. Solve $z^2(p^2 + q^2 + 1) = 1$.

17. Diagonalize the matrix $\begin{bmatrix} 2 & 1 & -1 \\ 1 & 1 & -2 \\ -1 & -2 & 1 \end{bmatrix}$

UG-AS-313

BCAS-12

U.G. DEGREE EXAMINATION - JULY, 2022

Computer Applications

(From CY – 2020 onwards)

First Semester

INFORMATION TECHNOLOGY ESSENTIALS

Time : 3 hours

Maximum marks : 70

PART A — (3 × 3 = 9 marks)

**Answer any THREE questions out of Five questions
in 100 words.**

All questions carry equal marks.

- 1. Write the limitations of Computer Systems.**
- 2. Define Software.**
- 3. What is System Design?**
- 4. Define Database Software.**
- 5. What is Diagram tool?**

PART B — ($3 \times 7 = 21$ marks)

Answer any THREE questions out of Five questions
in 200 words.

All questions carry equal marks.

6. Explain various classes of Software.
7. Briefly explain Client-Server Network.
8. Write about the Evolution of E-Type Software.
9. Explain Components of CASE Tools.
10. Write about History of Network.

PART C — ($4 \times 10 = 40$ marks)

Answer any FOUR questions out of Seven questions
in 500 words.

All questions carry equal marks.

11. Describe Generation of Computers with a neat diagram.
12. Explain Types of Operating System.
13. Explicate in detail about the general purpose applications.
14. Explain Types of Topology in detail.

15. Discuss Types of Network Operating Systems.
 16. Explain Internet Benefits to Organization in detail.
 17. Discuss functions of Operating system.
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UG-AS-286

BCAS-13

**U.G. DEGREE EXAMINATION –
JULY 2022**

(From CY – 2020 onwards)

First Semester

OFFICE AUTOMATION

Time : 3 hours

Maximum marks : 70

PART A — (3 × 3= 9marks)

Answer any **THREE** questions. Out of Five questions in
100 words.

All questions carry equal marks.

1. What is a computer?
2. How to save a file in Word document?
3. Write about Orientation?
4. What is a Menu?
5. How to Create an email –ID?

PART B— (3 × 7=21 marks)

Answer any THREE questions. Out of Five questions in
200 words.

All questions carry equal marks.

6. Explain the Evolution of computer?
7. Explain Formatting Text?
8. Briefly Explain Paragraph Indents?
9. Write about opening Spreadsheet?
10. Explain about the sorting data?

PART C— (4 × 10 = 40 marks)

Answer any FOUR questions out of Seven questions in
500 words.

ALL questions carry equal marks.

11. Describe in detail about Generation of Computers?
12. Explicate in detail about working with documents?
13. What is Toolbar and explain in detail about adding and deleting features to the toolbar?
14. Discuss about Shortcut Keys in Excel?

15. Discuss about the working with slides in detail.
 16. Describe formatting a presentation?
 17. Explain Google Gmail in detail?
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