(d) Put in **a/an** or **some** where necessary :

(8) I've seen _____ good films recently.

(9) When I was _____ child, I used to be very shy.

(10) Would you like to be _____ actor ?

1×10=10

II. Do as directed :

(a) Choose the correct form of the verb, singular or plural :

(1) Gymnastics *is/are* my favourite sport.

(2) Physics *was/were* my best subject at school.

(3) It's a nice place to visit. The people *is/are* very friendly.

(b) Put in 'the' or 'a' where necessary :

(4) Who is _____ Doctor Johnson ?

(5) I was ill, so I went to see _____ Doctor.

(6) There was _____ piano in the corner of the room.

(c) Make sentences beginning **Having** ...... Put the words in correct order :

(7) (tickets/the theatre/bought/into/our/went/we)

Having ....

(8) (journey/their/had/they/lunch/continued)

Having ....

(9) (the/coffee/shopping/I/a cup/went/done/for/of)

Having ....

(10) (went/she/work/her/home/finished)

Having ....

1×10=10

2

(Contd.)

SECTION—B

III. Write a letter to your friend inviting him to your sister's wedding.

OR

Write a letter to your landlord pointing out the need for repairing and whitewashing the house you occupy. 1×10=10

IV. Do as directed :

(a) Use the words in brackets to make sentences using **There is/There was** etc. :

(1) I can hear footsteps (somebody/come)

There _____.

(2) We were the only guests at the hotel

(nobody else/stay there)

(3) The college offers English courses in the evening. (a course/begin/next Monday)

(b) Make one sentence from two. Use the sentence in brackets to make a relative clause. Use **who(m)/whose/which/where.**

(4) The next stadium will be finished next month.

(It can hold 90,000 people)

(5) Alaska is the largest State in the USA.

(My brother lives there)

(6) Our teacher was very kind.

(I have forgotten her name)

(c) Put in 'that' or 'what' :
  (7) Did you hear _____ they said ?
  (8) Why do you blame me for everything _____ goes wrong ?
  (9) I don't agree with _____ you've just said.
  (10) I don't trust him. I don't believe anything _____ he says.   1×10=10

SECTION—C

V. Attempt any **TWO** :
  (a) Write a character sketch of Bishen Singh.
                                        (Toba Tek Singh)
  (b) Write a note on the author's attitude towards Kelveys and Burnell girls.   (The Doll's House)
  (c) Describe Eveline's relationship with Frank.
                                             2×5=10

VI. (a) Discuss the theme of the story 'The Taboo'.
   (b) Explain the process of transformation in the personality of Prabhat.   (A Strand of Cotton)
                                             2×5=10

SECTION—D

VII. (a) Write a note on R.K. Narayan's concept of beauty in 'Beauty and the Beast'.
    (b) Justify the title 'With a Song on their Lips' as used by Hugh and Colleen Gantzer.   2×5=10

VIII. (a) Bring out the element of humour in 'My Financial Career'.
     (b) Describe the sufferings and hardships of AIDS patients and the people connected with them.
                                             2×5=10

B.A./B.Sc. 2nd Semester (Batch 2022-25)

QUANTITATIVE TECHNIQUES

(Quantitative Techniques–II)

Time Allowed—3 Hours]   [Maximum Marks—100

Note :— Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. Define statistics. Discuss functions and limitations of statistics. Elaborate scope of statistics in economics.

2. Explain tabulation and classification of data. Highlight their importance.

SECTION—B

3. Find Mean, Median and Mode for the following data :

Size	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99
Frequency	11	19	21	16	10	8	6	3	1

4. Calculate standard deviation and coefficient of variation from the following data :

Marks		No. of students
0 - 10	-	5
10-20	-	7
20-30	-	14
30-40	-	12
40-50	-	9
50-60	-	6
60-70	-	2

SECTION—C

5. From the following data calculate the coefficient of correlation. Given that Mean Values of X and Y are 6 & 8 respectively.

X	:	6	2	10	4	8
Y	:	9	11	?	8	7

6. From the following data, find two regression equations and the correlation coefficient :

X	:	25	28	35	32	31	36	29	38	34	32
Y	:	43	46	49	41	36	32	31	30	33	39

SECTION—D

7. Define index numbers. Explain their uses. Explain the concepts of Laspeyre's Index number, Paasche's Index number and Fisher's Index number.

8. Fit a linear trend to the following data by least squares method :

Year :	1990	1992	1994	1996	1998
Production in 000 units :	18	21	23	27	16

Exam. Code : 103202
Subject Code : 1025

B.A./B.Sc. 2nd Semester (Batch 2022-25)
MATHEMATICS
(Calculus & Differential Equations)
Paper—I

Time Allowed—3 Hours]   [Maximum Marks—50

Note :—Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. (a) If $f(x) = ax^3 + 3bx^2$, determine 'a' and 'b' so that the graph of f has a point of Inflexsion at (–1, 2).

   (b) Find all the asymptotes of the curve with equation

   $(x - y)^2 (x - 2y) (x - 3y) - 2a(x^3 - y^3) - 2a^2(x - 2y) (x + y) = 0.$

   5+5=10

2. (a) Show that the curve $y^2 = bx \sin\dfrac{x}{a}$ has a mode or a conjugate point at the origin according as 'a' and 'b' have like or unlike signs.

(b) If CD and CD are a pair of conjugate semi-diameters of the ellipse $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$ then prove that the radius of curvature at P is $\frac{(CD)^3}{ab}$.

5+5=10

SECTION—B

3. (a) Evaluate $\int \frac{\sin hx}{\sinh^3 x - \cosh^3 x} dx$.

(b) Let $I_n = \int_0^{\frac{\pi}{2}} x^n \sin x \, dx$, $n > 1$, prove that :

$$I_n + n(n-1)I_{n-2} = n\left(\frac{\pi}{2}\right)^{n-1}$$

5+5=10

4. (a) Show that the area of the loop of the curve $y^2(a + x) = x^2(3a - x)$ is equal to the area between the curve and its asymptotes.

(b) Find the length of the arc of the parabola $y^2 - 4y + 2x = 0$ which lies in the first quadrant.

5+5=10

SECTION—C

5. (a) If differential equation $Mdx + Ndy = 0$ is of the form $f(xy)y\,dx + g(xy)x\,dy = 0$ and $Mx - Ny \neq 0$ then prove that Integrating factor is $\frac{1}{Mx - Ny}$.

(b) Solve the differential equation

$$p^3 - (x^2 + xy + y^2)p^2 + (x^3y + x^2y^2 + xy^3)p - x^3y^3 = 0$$

where $p = \dfrac{dy}{dx}$.   5+5=10

6. (a) Show that the family of curves $\dfrac{x^2}{a^2 + \lambda} + \dfrac{y^2}{b^2 + \lambda} = 1$,

λ being a parameter, is self orthogonal.

(b) Solve for complete solution and singular solution

of $p^3 - 4xyp + 8y^2 = 0$ where $p = \dfrac{dy}{dx}$.

5+5=10

SECTION—D

7. (a) Solve $(D^2 - 9D + 18)y = e^{e^{-3x}}$.

(b) Solve $(D^2 + 1)y = x\ e^{x \sin 2x}$.   5+5=10

8. (a) Solve $\dfrac{d^2y}{dx^2} + a^2y = \sin ax$ by using method of

variation of parameters.

(b) Solve in series the Legendre's equation of first
order.   5+5=10

B.A./B.Sc. 2ⁿᵈ Semester (Batch 2022-25)
ECONOMICS (Macroeconomics)

Time Allowed—3 Hours]   [Maximum Marks—100

Note :— Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. (a) Distinguish between Micro and Macro Economics.

   (b) Explain Say's Law of Market.

2. Discuss the concepts of Aggregate Demand And Aggregate Supply.

SECTION—B

3. Explain the term 'Investment'. What are the factors that affect Investment decision ? Discuss.

4. Explain in detail Hicks Model of Trade Cycle.

SECTION—C

5. What is Money ? Explain the functions and role of Money.

6. Write the definition of a Bank. Explain the Credit Creation Process in detail.

SECTION—D

7. Define the term 'Inflation'. What are the causes of Inflation ? How Inflation can be cured ?

8. Write a note on Fiscal Policy with a focus on explaining its meaning, objectives and instruments.

(Punjabi Version)

ਨੋਟ :— ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਘੱਟੋ-ਘੱਟ **ਇੱਕ** ਪ੍ਰਸ਼ਨ ਦੀ ਚੋਣ ਕਰਦੇ ਹੋਏ, ਕੁੱਲ **ਪੰਜ** ਪ੍ਰਸ਼ਨ ਕਰੋ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿੱਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ। ਸਾਰੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਅੰਕ ਬਰਾਬਰ ਹਨ।

ਭਾਗ—ੳ

1. (ੳ) ਮਾਈਕਰੋ ਅਤੇ ਮੈਕਰੋ ਇਕਨਾਮਿਕਸ ਵਿੱਚ ਅੰਤਰ ਕਰੋ।

   (ਅ) ਸੇ (Say) ਦੇ ਬਾਜ਼ਾਰ ਨਿਯਮ ਦੀ ਵਿਆਖਿਆ ਕਰੋ।

2. ਐਗਰੀਗੇਟ ਡਿਮਾਂਡ ਅਤੇ ਐਗਰੀਗੇਟ ਸਪਲਾਈ ਦੇ ਸੰਕਲਪਾਂ 'ਤੇ ਚਰਚਾ ਕਰੋ।

ਭਾਗ—ਅ

3. 'ਨਿਵੇਸ਼' ਸ਼ਬਦ ਦੀ ਵਿਆਖਿਆ ਕਰੋ। ਨਿਵੇਸ਼ ਦੇ ਫੈਸਲੇ ਨੂੰ ਪ੍ਰਭਾਵਿਤ ਕਰਨ ਵਾਲੇ ਕਾਰਕ ਕੀ ਹਨ ? ਚਰਚਾ ਕਰੋ।

4. ਵਪਾਰਕ ਚੱਕਰ ਦੇ ਹਿਕਸ ਮਾਡਲ ਦੀ ਵਿਸਥਾਰ ਵਿੱਚ ਵਿਆਖਿਆ ਕਰੋ।

ਭਾਗ—ੲ

5. ਮੁਦਰਾ ਕੀ ਹੈ ? ਮੁਦਰਾ ਦੇ ਕਾਰਜ ਅਤੇ ਭੂਮਿਕਾ ਦੀ ਵਿਆਖਿਆ ਕਰੋ।

6. ਬੈਂਕ ਦੀ ਪਰਿਭਾਸ਼ਾ ਲਿਖੋ। ਸਾਖ ਬਣਾਉਣ ਦੀ ਪ੍ਰਕਿਰਿਆ ਨੂੰ ਵਿਸਥਾਰ ਵਿੱਚ ਦੱਸੋ।

ਭਾਗ—ਸ

7. 'ਮਹਿੰਗਾਈ' ਸ਼ਬਦ ਦੀ ਪਰਿਭਾਸ਼ਾ ਦਿਓ। ਮਹਿੰਗਾਈ ਦੇ ਕਾਰਨ ਕੀ ਹਨ ? ਮਹਿੰਗਾਈ ਨੂੰ ਕਿਵੇਂ ਠੀਕ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ ?

8. ਵਿੱਤੀ ਨੀਤੀ ਦੇ ਅਰਥ, ਉਦੇਸ਼ਾਂ ਅਤੇ ਸਾਧਨਾਂ ਦੀ ਵਿਆਖਿਆ 'ਤੇ ਧਿਆਨ ਕੇਂਦ੍ਰਿਤ ਕਰਦੇ ਹੋਏ ਇੱਕ ਨੋਟ ਲਿਖੋ।

(Hindi Version)

नोट :— प्रत्येक भाग में से कम से कम **एक** प्रश्न का चयन करते हुए कुल **पाँच** प्रश्न करें। पांचवा प्रश्न किसी भी भाग में से किया जा सकता है। सभी प्रश्नों के समान अंक हैं।

भाग—क

1. (क) व्यष्टि और समष्टि अर्थशास्त्र में अंतर स्पष्ट कीजिए।

(ख) से के बाजार के नियम की व्याख्या कीजिए।

2. समग्र माँग और समग्र पूर्ति की अवधारणाओं की चर्चा कीजिए।

भाग—ख

3. 'निवेश' शब्द की व्याख्या कीजिए। निवेश निर्णय को प्रभावित करने वाले कारक कौन से है ? चर्चा करें।

4. व्यापार चक्र के हिक्स मॉडल की विस्तार से व्याख्या कीजिए।

भाग—ग

5. पैसा क्या है ? पैसे के कार्यों और भूमिका की व्याख्या कीजिए।

6. बैंक की परिभाषा लिखिए। साख निर्माण प्रक्रिया को विस्तार में समझाइए।

भाग—घ

7. 'मुद्रास्फीति शब्द को परिभाषित कीजिए। मुद्रास्फीति के कारण क्या हैं ? मुद्रास्फीति कैसे ठीक किया जा सकता है ?

8. राजकोषीय नीति के अर्थ, उद्देश्यों और साधनों की व्याख्या पर ध्यान देते हुए एक नोट लिखिए।

B.A./B.Sc. 2ⁿᵈ Semester (Batch 2022-25)

COMPUTER SCIENCE

(Programming Using C)

Time Allowed—3 Hours] [Maximum Marks—75

Note :— Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION—A

1. What is pseudo code ? How it can be used as problem solving tool ? Write a pseudo code to find sum and average of given three numbers. 15

2. What do you understand by Problem Analysis ? Explain the steps involved in problem analysis. 15

SECTION—B

3. What is the difference between formatted and unformatted functions ? 15

4. (a) Discuss hierarchy of operators. Give examples. 7

    (b) What is error ? Explain different types of errors in C. 8

SECTION—C

5. (a) What are the advantages and disadvantages of using conditional operator as compared to if-else statement ? 8

    (b) Distinguish between character array and string . 7

6. Write a program to calculate the sum of each row and each column and total of all elements of a matrix. 15

SECTION—D

7. Discuss the various ways in which the function can be declared and used. What are its advantages ? 15

8. (a) Explain the call by value method for passing arguments to a function. 8

(b) Can we assign one structure to another structure ? Under what conditions it can be done ? 7

B.A./B.Sc. 2ⁿᵈ Semester (Batch 2022-25)

PUNJABI (Compulsory)

Time Allowed—3 Hours] [Maximum Marks—50

ਨੋਟ :— ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਘੱਟੋ-ਘੱਟ **ਇੱਕ** ਪ੍ਰਸ਼ਨ ਦੀ ਚੋਣ ਕਰਦੇ
ਹੋਏ, ਕੁੱਲ **ਪੰਜ** ਪ੍ਰਸ਼ਨ ਕਰੋ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ
ਵਿੱਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ। ਸਾਰੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਅੰਕ ਬਰਾਬਰ
ਹਨ।

ਭਾਗ—ੳ

1. ਬਾਗ਼ੀ ਦੀ ਧੀ ਕਹਾਣੀ ਦਾ ਸਾਰ ਲਿਖੋ।

2. ਲਛਮੀ ਕਹਾਣੀ ਦਾ ਵਿਸ਼ਾ-ਵਸਤੂ ਪੇਸ਼ ਕਰੋ।

ਭਾਗ—ਅ

3. ਲਾਲਾ ਲਾਜਪਤ ਰਾਏ ਜੀਵਨੀ ਦਾ ਸਾਰ ਪ੍ਰਸਤੁਤ ਕਰੋ।

4. ਲੈਨਿਨ ਜੀਵਨੀ ਦੇ ਆਧਾਰ ਉੱਤੇ ਉਸਦਾ ਨਾਇਕ ਬਿੰਬ
ਉਸਾਰੋ।

ਭਾਗ—ੲ

5. ਸ਼ਬਦ ਬਣਤਰ ਉੱਤੇ ਨੋਟ ਲਿਖੋ।

6. ਸੰਬੰਧਕ ਅਤੇ ਯੋਜਕ ਬਾਰੇ ਉਦਾਹਰਨਾਂ ਸਹਿਤ ਜਾਣਕਾਰੀ ਦਿਉ।

ਭਾਗ—ਸ

7. ਬੈਂਕ ਨੂੰ ਚੈੱਕ ਦੀ ਅਦਾਇਗੀ ਰੋਕਣ ਲਈ ਪੱਤਰ ਲਿਖੋ।

8. ਨਿਮਨਲਿਖਤ ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰਿਆਂ ਦੇ ਅਰਥ ਸਪਸ਼ਟ ਕਰੋ :

    ਉਂਗਲੀ ਕਰਨਾ, ਈਦ ਦਾ ਚੰਨ ਹੋਣਾ, ਆਪ ਭਲੇ ਜਗ ਭਲਾ, ਖੁਆਰ ਹੋਣਾ, ਕੁੱਛੜ ਕੁੜੀ ਸ਼ਹਿਰ ਢੰਢੋਰਾ, ਚੋਰ ਨਾਲੋਂ ਪੰਡ ਕਹਾਲੀ, ਮਨ ਹਰਾਮੀ ਹੁੱਜਤਾਂ ਢੇਰ, ਈਨ ਮੰਨਣੀ।

B.A./B.Sc. 2nd Semester (Batch 2022-25)

ENGLISH (Compulsory)

Paper : ENC–151

Time Allowed—3 Hours]   [Maximum Marks—50

Note :—Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The fifth question may be attempted from any section. All questions carry equal marks.

SECTION—A

I.   Do as directed :

(a) Use your own ideas to complete these sentences. Use '**-ing**' :

(1) It was a beautiful day, so I suggested ____ .

(2) It was very funny. I couldn't stop ____ .

(b) Put in **to** or **for** :

(3) We stopped ____ petrol.

(4) I had to put on my glasses ____ read the paper.

(5) You need a lot of experience ____ this job.

(c) Put the verb in the correct form, '**-ing**' or **to** :

(6) Has it stopped ____ yet ? (rain)

(7) I refuse ____ any more questions. (answer)