

JEE MAIN BIOMOLECULES — PYQS

Max. Marks: 144

Questions: 36

Section A (MCQ) — 35 questions

Q.1 The incorrect statement from the following with respect to carbohydrates is :

[JEE Main 2026 (Online) 8th April Evening Shift]

- (1) All monosaccharides are reducing sugars.
- (2) The monosaccharide units obtained from hydrolysis of oligosaccharides are always the same.
- (3) Starch and cellulose are typical examples of polysaccharides, which are very high molecular weight compounds of more than ten monosaccharide units.
- (4) Open chain and cyclic structures co-exist at equilibrium that are responsible for certain properties as in the case of D-(+)-glucose.

Scan or tap for the full solution



Q.2 Which of the following amino acid will give violet coloured complex with neutral ferric chloride solution? [JEE Main 2026 (Online) 8th April Evening Shift]

- (1) Threonine
- (2) Serine
- (3) Tyrosine
- (4) Cysteine

Scan or tap for the full solution



Q.3 Match the List-I with List-II

[JEE Main 2026 (Online) 6th April Morning Shift]

Deficiency Disease		Vitamin	
A.	Scurvy	I.	Pyridoxine
B.	Convulsions	II.	Vitamin A
C.	Cheilosis	III.	Ascorbic Acid
D.	Xerophthalmia	IV.	Riboflavin

- (1) A-I, B-III, C-II, D-IV
- (2) A-I, B-III, C-IV, D-II
- (3) A-III, B-I, C-IV, D-II
- (4) A-III, B-I, C-II, D-IV

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Q.4 Match the List-I with List-II

[JEE Main 2026 (Online) 6th April Morning Shift]

Amino acid		Positive reaction/Test for functional group present in side chain of amino acid	
A.	Glutamine	I.	Hinsberg's test

Amino acid		Positive reaction/Test for functional group present in side chain of amino acid	
B.	Lysine	II.	Neutral FeCl_3 test
C.	Tyrosine	III.	Ceric ammonium nitrate test
D.	Serine	IV.	Hoffman bromamide degradation

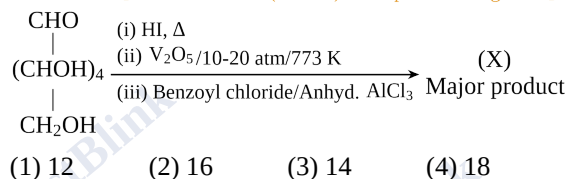
- (1) A-IV, B-II, C-I, D-III
- (2) A-IV, B-I, C-II, D-III
- (3) A-III, B-II, C-I, D-IV
- (4) A-IV, B-I, C-III, D-II

Scan or tap for the full solution



Q.5 Consider the following reactions. Total number of electrons in the π bonds and lone pair of electrons in the product (X) is :

[JEE Main 2026 (Online) 6th April Evening Shift]



- (1) 12
- (2) 16
- (3) 14
- (4) 18

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Q.6 Identify the correct statements.

Choose the correct answer from the options given below :

- A. Glucose exists in two anomeric forms.
- B. Anomers of glucose differ in configuration at C-1 in cyclic hemiacetal structure.
- C. Melting point of α - anomer of glucose is greater than β - anomer.
- D. Specific rotation of α - anomer is $+19^\circ$ while for β - anomer is $+112^\circ$
- E. α and β - anomers of glucose are prepared by crystallization of saturated glucose solution at 303 K and 371 K respectively.

[JEE Main 2026 (Online) 5th April Morning Shift]

- (1) A and B Only
- (2) B and C Only
- (3) A, B and D Only
- (4) A, B and E Only

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Q.7 Identify the incorrect statement about tertiary structure of proteins.

[JEE Main 2026 (Online) 5th April Evening Shift]

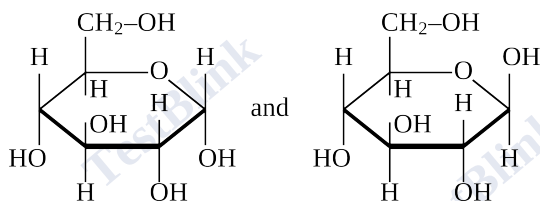
- (1) They can be fibrous or globular in structure.
- (2) The main forces that stabilize the structure are hydrogen bonding, disulphide links, van der Waals and electrostatic forces of attraction.
- (3) The structure remains intact when exposed to pH changes.
- (4) A linear polypeptide chain will convert to a secondary structure and then further folding of the secondary structure will convert to tertiary structure.

Scan or tap for the full solution



Q.8 Given below are two statements :

Statement-I:



are two anomers of D-(+)-glucose.

Statement-II: The open chain forms of D-glucose and D-fructose contain three similar chiral carbons at C₃, C₄ and C₅.

In the light of the above statements, choose the correct answer from the options given below :

[JEE Main 2026 (Online) 5th April Evening Shift]

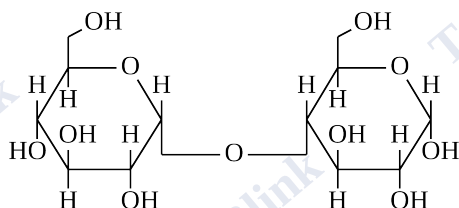
- (1) Both Statement-I and Statement-II are true
- (2) Both Statement-I and Statement-II are false
- (3) Statement-I is true but Statement-II is false
- (4) Statement-I is false but Statement-II is true

Scan or tap for the full solution



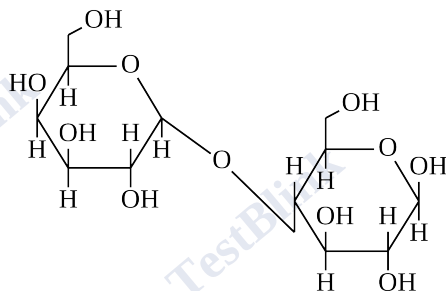
Q.9 Given below are two statements :

Statement-I: The structure of Maltose is given below:



Maltose is a non-reducing sugar.

Statement-II: The structure of Lactose is given below :



Lactose is a reducing sugar.

In the light of the above statements, choose the **correct** answer from the options given below :

[JEE Main 2026 (Online) 4th April Morning Shift]

- (1) Both Statement-I and Statement-II are true
- (2) Both Statement-I and Statement-II are false
- (3) Statement-I is true but Statement-II is false
- (4) Statement-I is false but Statement-II is true

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Q.10 Match the **List-I** with **List-II**

Name of amino acid		One letter symbol/type	
A.	Arginine	I.	D/Non-essential
B.	Aspartic acid	II.	R/Essential
C.	Lysine	III.	E/Non-essential
D.	Glutamic acid	IV.	K/Essential

Choose the **correct** answer from the options given below :

[JEE Main 2026 (Online) 4th April Morning Shift]

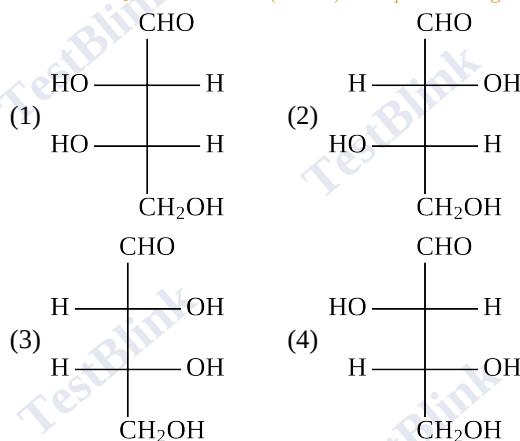
- (1) A-II, B-I, C-IV, D-III
- (2) A-IV, B-III, C-II, D-I
- (3) A-III, B-IV, C-I, D-II
- (4) A-II, B-IV, C-I, D-III

Scan or tap for the full solution



Q.11 A D-aldotetrose on oxidation with concentrated HNO₃ resulted in optically inactive dicarboxylic acid. The structure of the D-aldotetrose is:

[JEE Main 2026 (Online) 4th April Evening Shift]



Scan or tap for the full solution



Q.12 Match **List - I** with **List - II**.

[JEE Main 2026 (Online) 2nd April Morning Shift]

Vitamin		Name	
A.	Vitamin B ₁	I.	Pyridoxine
B.	Vitamin B ₂	II.	Ascorbic acid
C.	Vitamin B ₆	III.	Thiamine
D.	Vitamin C	IV.	Riboflavin

- (1) A-II, B-I, C-III, D-IV (2) A-IV, B-III, C-II, D-I
 (3) A-III, B-IV, C-I, D-II (4) A-I, B-III, C-II, D-IV

Scan or tap for the full solution



Q.13 Identify the correct pair having amino acid (A) and the hormone (B) that is iodinated derivative of the amino acid (A).

(T and Y represent one letter code for amino acids)

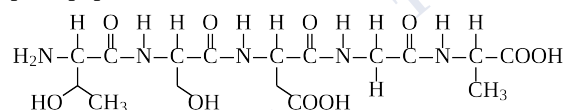
[JEE Main 2026 (Online) 2nd April Evening Shift]

- (1) Amino acid (A) - T Hormone (B) - Insulin
 (2) Amino acid (A) - T Hormone (B) - Thyroxine
 (3) Amino acid (A) - Y Hormone (B) - Thyroxine
 (4) Amino acid (A) - Y Hormone (B) - Insulin

Scan or tap for the full solution



Q.14 In the given pentapeptide, find out an essential amino acid (Y) and the sequence present in the pentapeptide :



Choose the correct answer from the options given below :

[JEE Main 2026 (Online) 28th January Morning Shift]

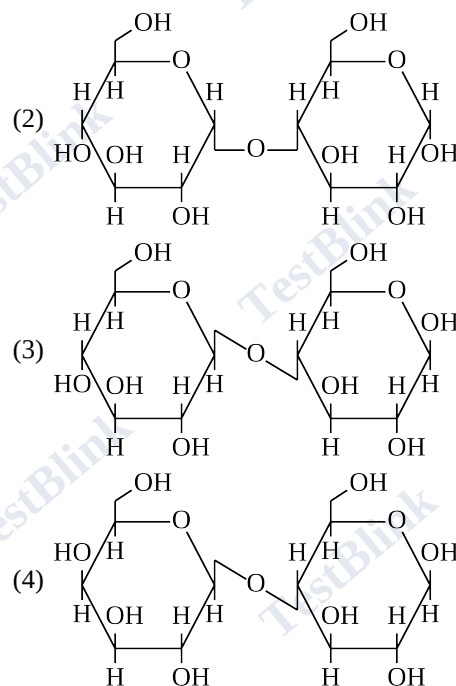
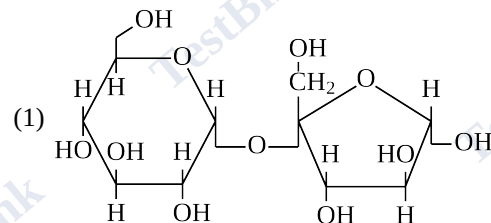
- (1) (Y) (Sequence)
 Serine Thr-Ser-Asp-Ala-Gly
 (2) (Y) (Sequence)
 Serine Ser-Asp-Thr-Ala-Gly
 (3) (Y) (Sequence)
 Threonine Ser-Thr-Asp-Gly-Ala
 (4) (Y) (Sequence)
 Threonine Thr-Ser-Asp-Gly-Ala

Scan or tap for the full solution



Q.15 Structures of four disaccharides are given below. Among the given disaccharides, the non-reducing sugar is :

[JEE Main 2026 (Online) 28th January Evening Shift]



Scan or tap for the full solution



Q.16 The number of possible tripeptides formed involving alanine (ala), glycine (gly) and valine (val), where no amino acid has been used more than once is:

[JEE Main 2026 (Online) 24th January Evening Shift]

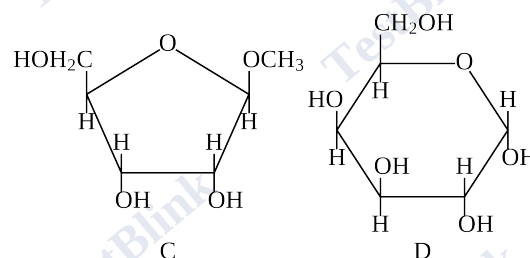
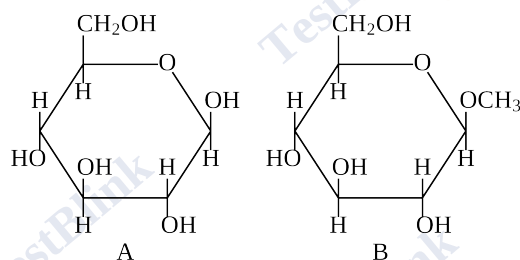
- (1) 8 (2) 3 (3) 4 (4) 6

Scan or tap for the full solution



Q.17 From the given following (A to D) cyclic structures, those which will not react with Tollens' reagent are:

[JEE Main 2026 (Online) 23rd January Morning Shift]



- (1) A and D (2) A and B (3) B and D (4) B and C

Scan or tap for the full solution



Q.18 Both human DNA and RNA are chiral molecules. The chirality in DNA and RNA arises due to the presence of

[JEE Main 2026 (Online) 23rd January Evening Shift]

- (1) L-sugar component (2) D-sugar component
(3) Chiral phosphate unit (4) Base unit

Scan or tap for the full solution



Q.19 Given below are two statements :

Statement-I: Sucrose is dextrorotatory. However, sucrose upon hydrolysis gives a solution having mixture of products. This solution shows laevorotation.

Statement-II: Hydrolysis of sucrose gives glucose and fructose. Since the laevorotation of glucose is more than the dextrorotation of fructose, the resulting solution becomes laevorotatory.

In the light of the above statements, choose the correct answer from the options given below :

[JEE Main 2026 (Online) 22nd January Morning Shift]

- (1) Both Statement-I and Statement-II are false
(2) Both Statement-I and Statement-II are true
(3) Statement-I is true but Statement-II is false
(4) Statement-I is false but Statement-II is true

Scan or tap for the full solution



Q.20 Match List-I with List-II.

List-I Reaction of Glucose with		List-II Product formed	
A.	Hydroxylamine	I.	Gluconic acid
B.	Br ₂ water	II.	Glucose pentaacetate
C.	Excess acetic anhydride	III.	Saccharic acid
D.	Concentrated HNO ₃	IV.	Glucosime

Choose the correct answer from the options given below :

[JEE Main 2026 (Online) 22nd January Evening Shift]

- (1) A-IV, B-III, C-II, D-I (2) A-I, B-III, C-IV, D-II
(3) A-III, B-I, C-IV, D-II (4) A-IV, B-I, C-II, D-III

Scan or tap for the full solution



Q.21 Identify the correct statements.

Choose the correct answer from the options given below :

- A. Arginine and Tryptophan are essential amino acids.
B. Histidine does not contain heterocyclic ring in its structure.

- C. Proline is a six membered cyclic ring amino acid.
D. Glycine does not have chiral centre.
E. Cysteine has characteristic feature of side chain as MeS-CH₂-CH₂-.

[JEE Main 2026 (Online) 21st January Morning Shift]

- (1) C and D Only (2) A and D Only
(3) C and E Only (4) B and E Only

Scan or tap for the full solution



Q.22 The correct statements are :

- A. Activation energy for enzyme catalysed hydrolysis of sucrose is lower than that of acid catalysed hydrolysis.
B. During denaturation, secondary and tertiary structures of a protein are destroyed but primary structure remains intact.
C. Nucleotides are joined together by glycosidic linkage between C₁ and C₄ carbons of the pentose sugar.
D. Quaternary structure of proteins represents overall folding of the polypeptide chain.

Choose the correct answer from the options given below :

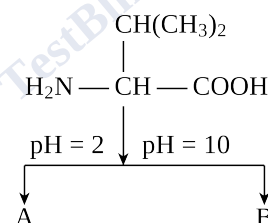
[JEE Main 2026 (Online) 21st January Evening Shift]

- (1) A, B and D Only (2) A, C and D Only
(3) B and C Only (4) A and B Only

Scan or tap for the full solution

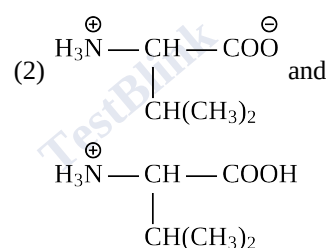
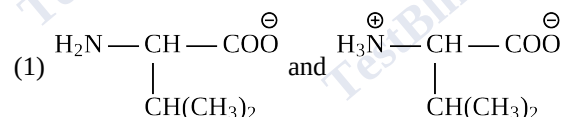


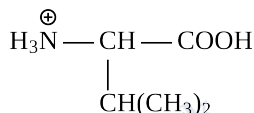
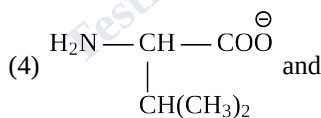
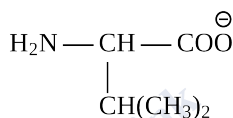
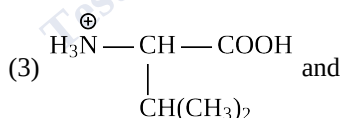
Q.23



Choose the correct option for structures of A and B, respectively

[JEE Main 2025 (Online) 8th April Evening Shift]



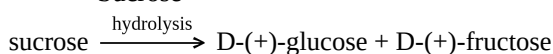
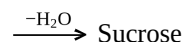


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Q.24 Given below are two statements:

Statement-I: D-(+)-glucose + D-(+)-fructose



Statement-II: Invert sugar is formed during sucrose hydrolysis

In the light of the above statements, choose the correct answer from the options given below

[JEE Main 2025 (Online) 7th April Morning Shift]

- (1) Both Statement-I and Statement-II are false
- (2) Statement-I is false but Statement-II is true
- (3) Both Statement-I and Statement-II are true
- (4) Statement-I is true but Statement-II is false

Scan or tap for the full solution



Q.25 Given below are two statements :

Statement-I: On hydrolysis, oligo peptides give rise to fewer number of α -amino acids while proteins give rise to a large number of β -amino acids.

Statement-II: Natural proteins are denatured by acids which convert the water soluble form of fibrous proteins to their water insoluble form.

In the light of the above statements, choose the most appropriate answer from the options given below :

[JEE Main 2025 (Online) 7th April Evening Shift]

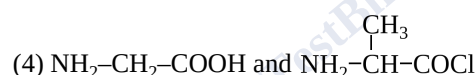
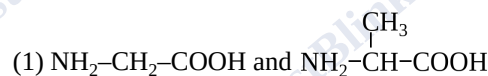
- (1) Statement-I is incorrect but Statement-II is correct
- (2) Both Statement-I and Statement-II are incorrect
- (3) Both Statement-I and Statement-II are correct
- (4) Statement-I is correct but Statement-II is incorrect

Scan or tap for the full solution



Q.26 Identify the pair of reactants that upon reaction, with elimination of HCl will give rise to the dipeptide Gly-Ala.

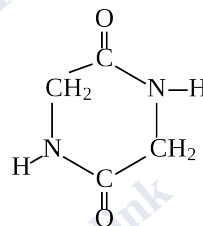
[JEE Main 2025 (Online) 4th April Morning Shift]



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Q.27 A dipeptide, "x" on complete hydrolysis gives "y" and "z". "y" on treatment with aq. HNO_2 produces lactic acid. On the other hand "z" on heating gives the following cyclic molecule.



Based on the information given, the dipeptide "x" is :

[JEE Main 2025 (Online) 4th April Evening Shift]

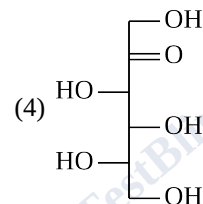
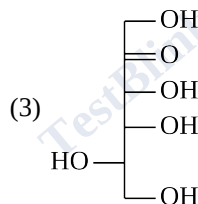
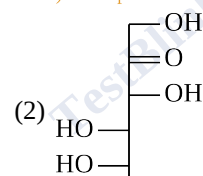
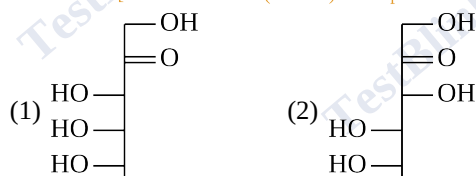
- (1) alanine-alanine
- (2) valine-glycine
- (3) valine-leucine
- (4) alanine-glycine

Scan or tap for the full solution



Q.28 Which of the following is the correct structure of L-Fructose?

[JEE Main 2025 (Online) 3rd April Morning Shift]



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Q.29 Fat soluble vitamins are:

- A. Vitamin B₁ B. Vitamin C
C. Vitamin E D. Vitamin B₁₂
E. Vitamin K

Choose the correct answer from the options given below: [JEE Main 2025 (Online) 3rd April Evening Shift]

- (1) B & C Only (2) C & D Only
(3) C & E Only (4) A & B Only

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full solution



Q.30 Identify the correct statement among the following :

[JEE Main 2025 (Online) 2nd April Morning Shift]

- (1) All naturally occurring amino acids except glycine contain one chiral centre.
(2) Amino acid, cysteine can easily undergo dimerisation due to the presence of free SH group.
(3) Glutamic acid is the only amino acid that contains a –COOH group at the side chain.
(4) All naturally occurring amino acids are optically active.

Scan or tap for the
full solution



Q.31 A tetrapeptide, "x" on complete hydrolysis produced glycine (Gly), alanine (Ala), valine (Val), leucine (Leu) in equimolar proportion each. The number of tetrapeptides (sequences) possible involving each of these amino acids is:

[JEE Main 2025 (Online) 2nd April Evening Shift]

- (1) 32 (2) 24 (3) 8 (4) 16

Scan or tap for the
full solution



Q.32 Match List - I with List - II.

List - I Carbohydrate		List - II Linkage Source	
A.	Amylose	I.	β -C ₁ – C ₄ , plant
B.	Cellulose	II.	α -C ₁ – C ₄ , animal
C.	Glycogen	III.	α -C ₁ – C ₄ , α -C ₁ – C ₆ , plant
D.	Amylopectin	IV.	α -C ₁ – C ₄ , plant

Choose the correct answer from the options given below :

[JEE Main 2025 (Online) 29th January Morning Shift]

- (1) (A)-(II), (B)-(III), (C)-(I), (D)-(IV)
(2) (A)-(III), (B)-(III), (C)-(I), (D)-(IV)
(3) (A)-(IV), (B)-(I), (C)-(III), (D)-(II)
(4) (A)-(IV), (B)-(I), (C)-(II), (D)-(III)

Scan or tap for the
full solution



Q.33 Given below are two statements:

Statement-I: D-glucose pentaacetate reacts with 2,4-dinitrophenylhydrazine

Statement-II: Starch, on heating with concentrated sulfuric acid at 100°C and 2–3 atmosphere pressure produces glucose.

In the light of the above statements, choose the correct answer from the options given below

[JEE Main 2025 (Online) 28th January Morning Shift]

- (1) Statement-I is true but Statement-II is false
(2) Both Statement-I and Statement-II are true
(3) Statement-I is false but Statement-II is true
(4) Both Statement-I and Statement-II are false

Scan or tap for the
full solution



Q.34 Match List-I with List-II.

List - I (Saccharides)		List - II (Glycosidic-linkages found)	
A.	Sucrose	I.	α 1 – 4
B.	Maltose	II.	α 1 – 4 and α 1 – 6
C.	Lactose	III.	α 1 – β 2
D.	Amylopectin	IV.	β 1 – 4

Choose the **correct** answer from the options given below :

[JEE Main 2025 (Online) 28th January Evening Shift]

- (1) (A)-(III), (B)-(I), (C)-(IV), (D)-(II)
(2) (A)-(I), (B)-(II), (C)-(III), (D)-(IV)
(3) (A)-(II), (B)-(IV), (C)-(III), (D)-(I)
(4) (A)-(IV), (B)-(II), (C)-(I), (D)-(III)

Scan or tap for the
full solution



Q.35 Identify correct conversion during acidic hydrolysis from the following :

- A. starch gives galactose.
B. cane sugar gives equal amount of glucose and fructose.
C. milk sugar gives glucose and galactose.
D. amylopectin gives glucose and fructose.
E. amylose gives only glucose.

Choose the **correct** answer from the options given below :

[JEE Main 2025 (Online) 28th January Evening Shift]

- (1) (A), (B) and (C) only (2) (B), (C) and (D) only
(3) (B), (C) and (E) only (4) (C), (D) and (E) only

Scan or tap for the
full solution



Section B (Numerical) — 1 question

Q.36 The total number of hydrogen bonds of a DNA-double Helix strand whose one strand has the following sequence of bases is _____.

5'-G-G-C-A-A-A-T-C-G-G-C-T-A-3'

[JEE Main 2025 (Online) 4th April Morning Shift]

Scan or tap for the
full solution



ANSWER KEY

Section A (MCQ) — 35 questions

Ques.	1	2	3	4	5	6	7	8	9	10	11
Ans.	2	3	3	2	4	4	3	1	4	1	3
Ques.	12	13	14	15	16	17	18	19	20	21	22
Ans.	3	3	4	1	4	4	2	3	4	2	4
Ques.	23	24	25	26	27	28	29	30	31	32	33
Ans.	3	2	2	3	4	2	3	2	2	4	3
Ques.	34	35									
Ans.	1	3									

Section B (Numerical) — 1 question

Ques.	36										
Ans.	33										