

# GUJCET-E-2015

Test Booklet No.

Test Booklet Code

This booklet contains 48 pages.

**DO NOT** open this Test Booklet until you are asked to do so.

## Important Instructions :

- 1) This test consists 120 questions of Physics, Chemistry and Biology. Each question carries 1 mark. For each correct response the candidate will get 1 mark. For each incorrect response  $\frac{1}{4}$  mark will be deducted. Maximum marks is 120.
- 2) This Test is of 3 hours duration.
- 3) Use Black Ball Point Pen only for writing particulars on OMR Answer Sheet and marking answers by darkening the circle '●'.
- 4) Rough work is to be done on the space provided for this purpose in the Test Booklet only.
- 5) On completion of the test, the candidate must handover the Answer Sheet to the Invigilator in the Room / Hall. The candidates are allowed to take away this Test Booklet with them.
- 6) The CODE for this Booklet is C. Make sure that the CODE printed on the Answer Sheet is the same as that on this booklet. In case of discrepancy, the candidate should immediately report the matter to the Invigilator for replacement of both the Test Booklet and the Answer Sheet.
- 7) The candidate should ensure that the Answer Sheet is not folded. Do not make any stray marks on the Answer Sheet.
- 8) Do not write your Seat No. anywhere else, except in the specified space in the Test Booklet / Answer Sheet.
- 9) Use of White fluid for correction is not permissible on the Answer Sheet.
- 10) Each candidate must show on demand his / her Admission Card to the Invigilator.
- 11) No candidate, without special permission of the Superintendent or Invigilator, should leave his / her seat.
- 12) Use of Manual Calculator is permissible.
- 13) The candidate should not leave the Examination Hall without handing over their Answer Sheet to the Invigilator on duty and must sign the Attendance Sheet (Patrak - 01). Cases where a candidate has not signed the Attendance Sheet (Patrak - 01) be deemed not to have handed over the Answer Sheet and dealt with as an unfair means case.
- 14) The candidates are governed by all Rules and Regulations of the Board with regard to their conduct in the Examination Hall. All cases of unfair means will be dealt with as per Rules and Regulations of the Board.
- 15) No part of the Test Booklet and Answer Sheet shall be detached under any circumstances.
- 16) The candidates will write the Correct Test Booklet Code as given in the Test Booklet / Answer Sheet in the Attendance Sheet (Patrak - 01).

Candidate's Name : ....D.HRVVISHA.....SALGOTHA.....

Note: The information provided here is only for reference. It may vary the Original.



# BIOLOGY

81) In which field application of biotechnology occurs?

- (A) Bio-medicine
- (B) Agriculture
- (C) Environmental field
- (D) All of the above

82) \_\_\_\_\_ shows anti-allergic and anti-inflammatory effect.

- (A) Glucocorticoids
- (B) Mineralocorticoids
- (C) Sex corticoids
- (D) Noradrenaline

83) During the process of decomposition in which stage complex organic matter convert into inorganic ions and salts by fungi?

- (A) Mineralization
- (B) Catabolism
- (C) Fragmentation
- (D) All of the above

84) How much amount of volume of air is in lungs FRC?

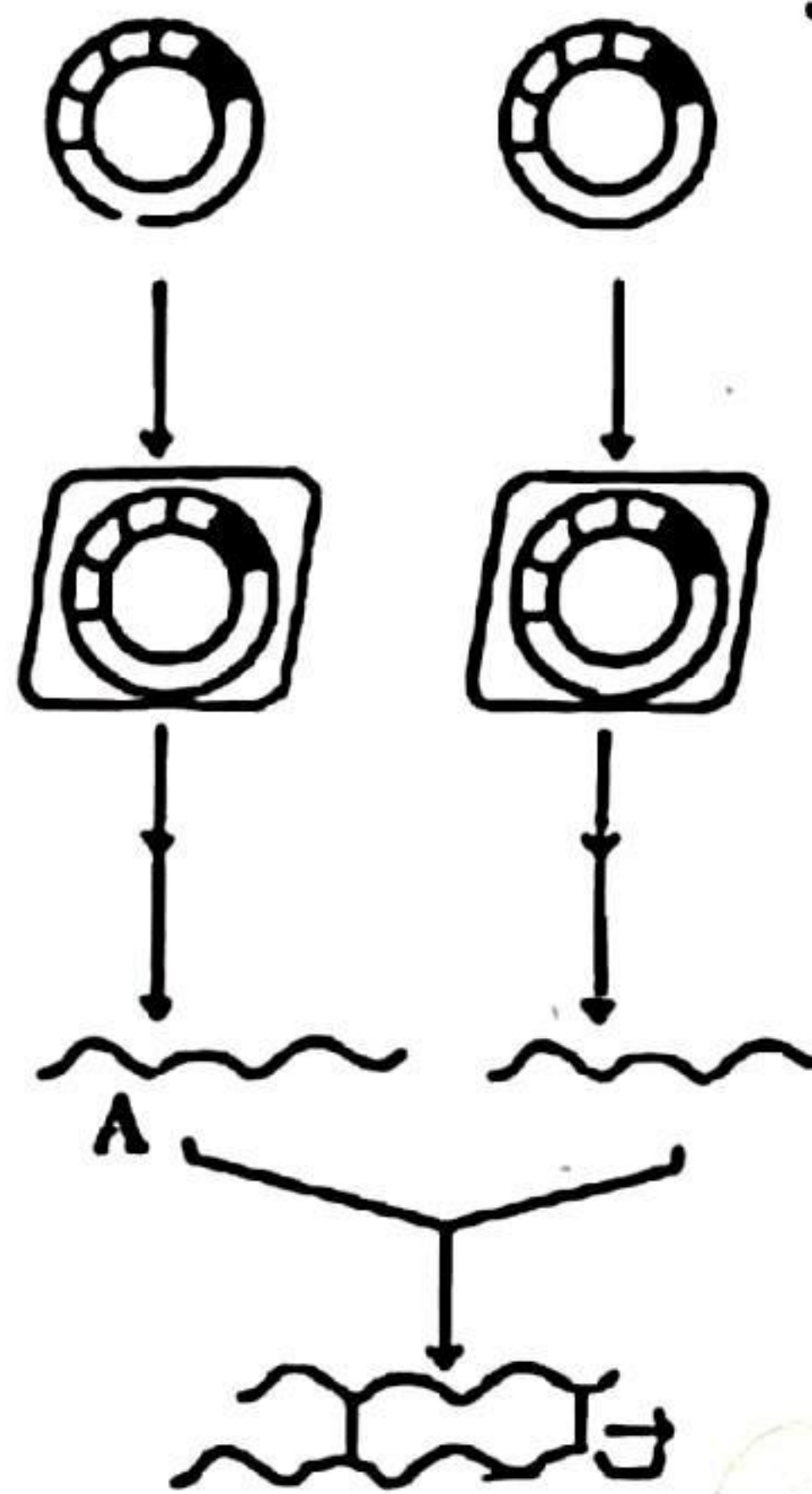
- (A) 2100 ml to 2500 ml
- (B) 1500 ml to 1600 ml
- (C) 2500 ml to 3000 ml
- (D) 1600 ml to 2100 ml

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(Space for Rough Work)



85) What indicated "A" in given figure?



(A) Glycosidic bond

(B) Peptide bond ✗

☒ (C) Disulfide bond

(D) Hydrophobic bond ✗

86) What is total diastolic time of ventricle in cardiac cycle?

☒ (A) 0.40 second

(B) 0.30 second

(C) 0.50 second

(D) 0.10 second

87) Which amino acid determines by four genetic codes?

(A) Proline (Pro)

☒ (B) Leucine (Leu)

(C) Serine (Ser)

(D) Tyrosine (Tyr)

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(Space for Rough Work)



✓ 88) Which is the inhibitory hormone of GH?

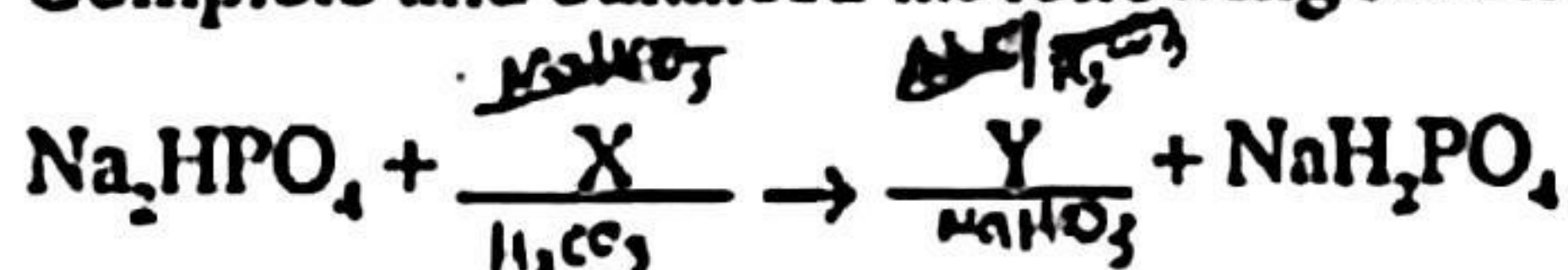
(A) Parathormone ✗

(B) Insulin ✗

(C) Somatostatin ✗

✓ (D) Testosterone

✓ 89) Complete and balanced the following reaction.



(A)  $\text{X} = \text{H}_2\text{CO}_3$ ,  $\text{Y} = \text{NaH}_2\text{CO}_3$  ✗

✓ (B)  $\text{X} = \text{NaHCO}_3$ ,  $\text{Y} = \text{NaCl}$

(C)  $\text{X} = \text{NaHCO}_3$ ,  $\text{Y} = \text{H}_2\text{CO}_3$

✓ (D)  $\text{X} = \text{H}_2\text{CO}_3$ ,  $\text{Y} = \text{NaHCO}_3$  ✓

✓ 90) How many molecules of ATP and NADPH are required in formation of two molecules of glucose? How many Calvin cycles are required?

(A) 18 ATP, 12 NADPH, 6 Calvin cycles

(B) 36 ATP, 24 NADPH, 12 Calvin cycles

✓ (C) 36 ATP, 24 NADPH, 6 Calvin cycles

(D) 24 ATP, 36 NADPH, 12 Calvin cycles

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(Space for Rough Work)





✓ 91) A - The DNA fingerprint is the same for every cell, tissue and organ of a person.

R - DNA fingerprint is used for treatment of inherited disorders like Huntington's disease, Alzheimer's and Sickle cell anemia.

(A) A and R both are correct but R is not explanation of A

(B) A and R both are correct. R is explanation of A

(C) A is correct and R is wrong

✓ (D) A is wrong and R is correct

92) Which part is not included in Cochlear duct?

(A) Macula of Utricle

(B) Reissner's membrane

(C) Scala Media

(D) Tectorial membrane

93) Which is Gynandromorph type of animal?

✓ (A) Drosophilla

(B) Beetles

(C) Silk worms

(D) All of the above

94) DNA polymerase enzyme is isolated from which bacteria?

(A) Thermus aquaticus

✓ (B) E.Coli

(C) Bacillus thuringiensis

(D) Agrobacterium

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(Space for Rough Work)



✓ 95) Match the column I, II and III

Column I	Column II	Column III
P) Trichomoniasis	i) Herpes Simplex	x) Pain in lower abdomen
Q) Syphilis	ii) Neisseria gonorrhoeae	y) Inflammation and itching in and around vagina
R) Gonorrhoea	iii) Treponema Pallidum	z) Patchy hair loss
S) Genital herpes	iv) Trichomonas Vaginalis	w) Feeling of uneasiness

(A) (P - iv - y) (Q - i - z) (R - ii - x) (S - iii - w)

(B) (P - iv - y) (Q - iii - z) (R - ii - x) (S - i - w)

(C) (P - iv - x) (Q - i - w) (R - ii - y) (S - iii - z)

(D) (P - i - z) (Q - ii - y) (R - iv - w) (S - iii - x)

✓ 96) What is the height and weight of twelve weeks old human embryo?

(A) 7.5 cm, 14 gram

✓ (B) 7.5 cm, 650 gram

(C) 42 cm, 1800 gram X

(D) 32 cm, 650 gram X

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(Space for Rough Work)



✓ 97) Assertion A : Restriction endonuclease recognize short palindromic sequence and cut at specific sites.

Reason - R : When a restriction endonuclease acts on Palindrome, it cleaves both the strands of DNA molecule.

(A) A and R are both correct but R is not explanation of A

✓ (B) A and R are both correct. R is explanation of A

(C) A is correct and R is wrong

(D) A is wrong and R is correct

✓ 98) Write proper option by matching column I, II and III.

Column I (Name)	Column II (Enzyme)	Column III (Function)
i) Gastric Juice	P) Chymo- trypsinogen	A) Dipeptide convert into amino acid
ii) Intestinal Juice	Q) Ptylin	B) Proteoses convert into small polypeptides
iii) Saliva	R) Renin	C) Casein convert into paracasein
iv) Pancreatic juice	S) Erepsin	D) Conversion of starch into maltose

(A) (i - R - C) (ii - S - A) (iii - Q - D) (iv - P - B)

(B) (i - R - C) (ii - S - A) (iii - Q - B) (iv - P - D)

(C) (i - S - D) (ii - R - C) (iii - P - B) (iv - Q - A)

(D) (i - Q - A) (ii - P - C) (iii - R - B) (iv - S - D)

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(Space for Rough Work)



99) Write the correct sequence of genetic diversity.

- (A) Population → Species → Chromosomes → Genes → Nucleotides  
 (B) Kingdom → Population → Species → Genes → Chromosome → Nucleotides ✗  
 (C) Species → Genes → Population → Chromosomes → Nucleotides ✗  
 (D) Kingdom → Species → Chromosomes → Genes → Nucleotides

100) Match the column I and II and select the correct option.

Column I

Column II (concentration of DDT in ppm)

- A) Zooto Plankton  
 B) Small fishes  
 C) Water  
 D) Fish eating birds  
 E) Big fishes

- P) 0.003 ppm  
 Q) 2 ppm  
 R) 25 ppm  
 S) 0.04 ppm  
 T) 0.5 ppm

- |     | A | B | C | D | E |
|-----|---|---|---|---|---|
| (A) | S | T | P | Q | R |
| (B) | S | T | P | R | Q |
| (C) | S | T | R | Q | P |
| (D) | Q | P | S | T | R |

(Space for Rough Work)

D E B A C

R Q T S P



101) Which of the following disease shows the blockage of kidney tubules and causes severe back pain?

- (A) Kidney failure
- (B) Renal calculi
- (C) Uremia
- (D) Nephritis

102) During photorespiration which compounds are formed having 2C and 3C respectively in Peroxisome?

- (A) Glycine, Glycerate
- (B) Glycolate, Glycine
- (C) Serine, Glycine
- (D) Phosphoglycerate, Glycolate

103) During rainy season wooden doors and windows are not properly closed. Why?

- (A) Diffusion
- (B) Plasmolysis
- (C) Osmosis
- (D) Imbibition

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(Space for Rough Work)



104) Match the column I, II and III

Column I	Column II	Column III
A) Sickle Cell Anaemia	i) Due to recessive PP genes	P) Arrangement of Valine in place of Glutamic acid
B) Phenyl Ketonuria	ii) Due to absence of homogentisic oxidase enzyme	Q) Inborn error of metabolism
C) Alkaptonuria	iii) Follows Mendelian Principles	R) Urine turns black when exposed to air
D) Thalassaemia	iv) Characters caused by homozygous recessive genes	S) The required haemoglobin is not generated in the blood

(A) (A - iv - P) (B - i - Q) (C - ii - R) (D - iii - S)

(B) (A - ii - S) (B - iii - R) (C - i - Q) (D - iv - P)

(C) (A - iv - P) (B - iii - R) (C - i - S) (D - ii - R)

(D) (A - iii - R) (B - i - Q) (C - iv - P) (D - ii - S)

105) Which of the following is the symptom of Ulcerative colitis?

- (A) Difficulty in swallowing
- (B) Watery stools containing blood and mucus
- (C) Loss of appetite
- (D) Eyes turn yellow

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(Space for Rough Work)



106) Which one is not cranial bone?

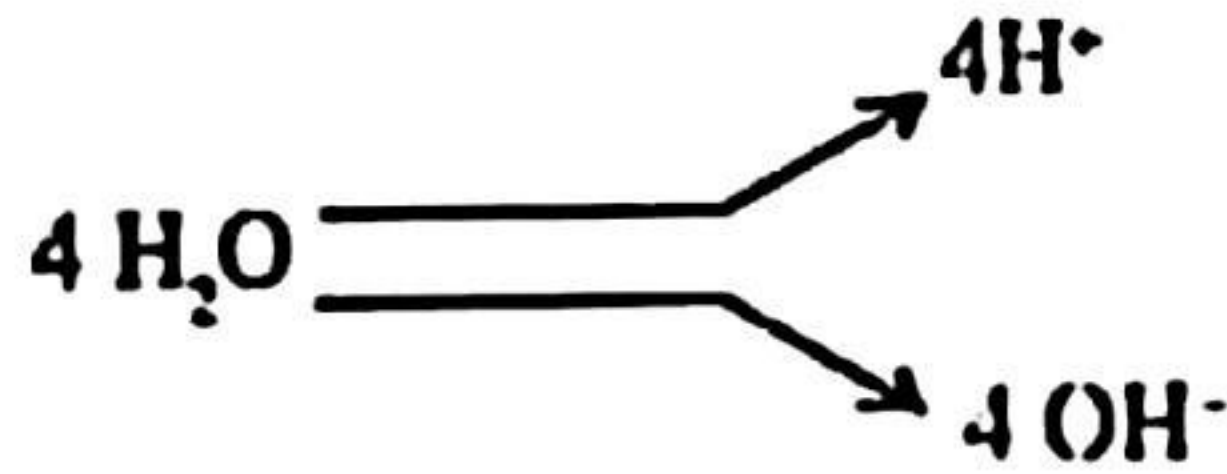
(A) Zygomatic

(B) Frontal

(C) Temporal

(D) Sphenoid

107)



In this process which of the following play important role?

(A) Chlorophyll

(B) Light energy

(C)  $\text{Ca}^{++}$ ,  $\text{Mn}^{++}$ ,  $\text{Cl}^-$

(D) All of the above

108) Which of the following is correct trend of succession in Hydrosere succession?

(A) Phytoplankton → Reed swamp → Rooted submerged → Sedge meadow

(B) Phytoplankton → Rooted submerged → Reed swamp → Sedge meadow

(C) Phytoplankton → Sedge meadow → Reed swamp → Root submerged

(D) Rooted submerged → Phytoplankton → Reed swamp → Sedge meadow

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(Space for Rough Work)



109) On which surface of cell Donnan equilibrium occur?

(A) Tonoplast

(B) Cell wall

(C) Plasma membrane

(D) Nuclear membrane

110) Which type of gene regulate sex-determination in Spinach plant?

(A) Heterozygous genes

(B) Homozygous genes

(C) Single gene

(D) Multiple genes

111) When the respiratory substances are more than one then which respiratory substrates are not used?

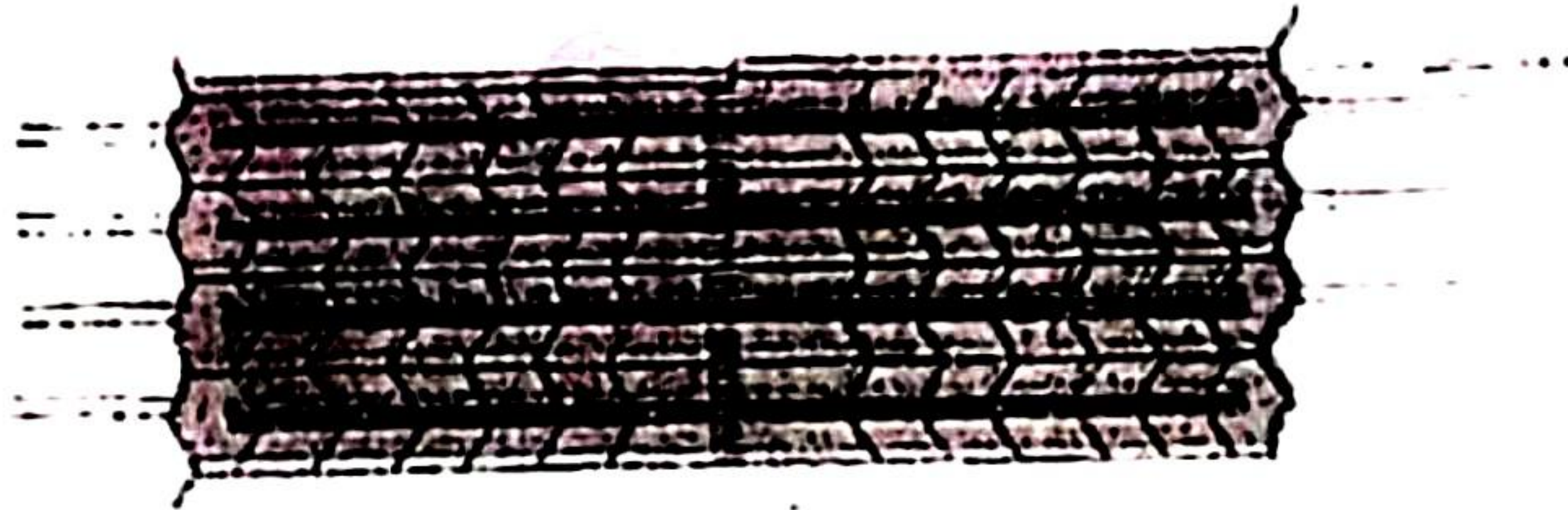
(A) Pure Protein

(B) Lipid

(C) Carbohydrate

(D) (A) and (B) both

112) State the condition of muscle contraction in following diagram.



(A) Resting potential

(B) Contraction

(C) Maximally contracted

(D) None

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(Space for Rough Work)



113) How many years are considered in one minute in Geological clock?

(A) 1,87,5(X),(X)(X) years

(B) 52000 years

(C) 3,25,0(X)(X) years

(D) 1,90,000 years

114) Which structure is formed at the time of exchange of gamete nuclei in given animal during sexual reproduction.



(A) Cytoplasmic filaments

(B) Plasmodesmata

(C) Internal tubule

(D) Cytoplasmic bridge

115) Name the plant shows adventive embryonic cells.

(A) Citrus and Mango

(B) Sunflower and Mango

(C) Lemon and Maize

(D) Lemon and Palms

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(Space for Rough Work)



116) During respiration \_\_\_\_\_.

- (A) 2 PGAL during glycolysis and 4 Pyruvic acid are produced in Krebs's cycle
- (B) 2 PGAL during glycolysis and none of the PGAL produced in Krebs's cycle
- ✓ (C) 2 PGAL during glycolysis and 2 Pyruvic acid are produced in Krebs's cycle
- (D) PGAL is not produced during respiratory events

117) Which of the following function is performed by collecting tubule of kidney?

- (A) In the maintenance of pH and ionic balance of blood by the secretion of  $H^+$  and  $K^+$  ions ✗
- (B) Maintenance of pH of blood and removal of  $Na^+$  and  $K^+$  ions
- ✓ (C) Absorption of glucose and ammonia from the blood
- (D) None of above

118) A - Nerve fibre can become excited through touch, smell, pressure and chemical changes and there is a change in polarity.

R - It is called active potential.

- ✓ (A) A and R both are correct but A is not correct explanation of R.
- (B) A and R both are correct and A is correct explanation of R.
- (C) A is correct and R is wrong
- (D) A is wrong and R is correct

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(Space for Rough Work)



✓ 119) Select proper option, by matching column I, II and III.

Column I (Common Name)	Column II (Roman Numerical Designation)	Column III (Activation product)
P) Prothrombin	x) I	i) Convertin
Q) Proconvertin	y) V	ii) Fibrin
R) Fibrinogen	z) II	iii) Thrombin
S) Proaccelerin	w) VII	iv) Accelerin
<del>(A) (P - w - ii) (Q - z - iii) (R - y - iv) (S - x - i)</del>		
<del>(B) (P - z - iii) (Q - w - i) (R - y - ii) (S - x - iv)</del>		
<del>(C) (P - z - iii) (Q - w - ii) (R - x - iv) (S - y - i)</del>		
(D) (P - z - iii) (Q - w - i) (R - x - ii) (S - y - iv)		

120) What is "A" and "B" in given diagram?

(A) A = RNA Primer

B = DNA Helicase

(B) A = RNA Primer

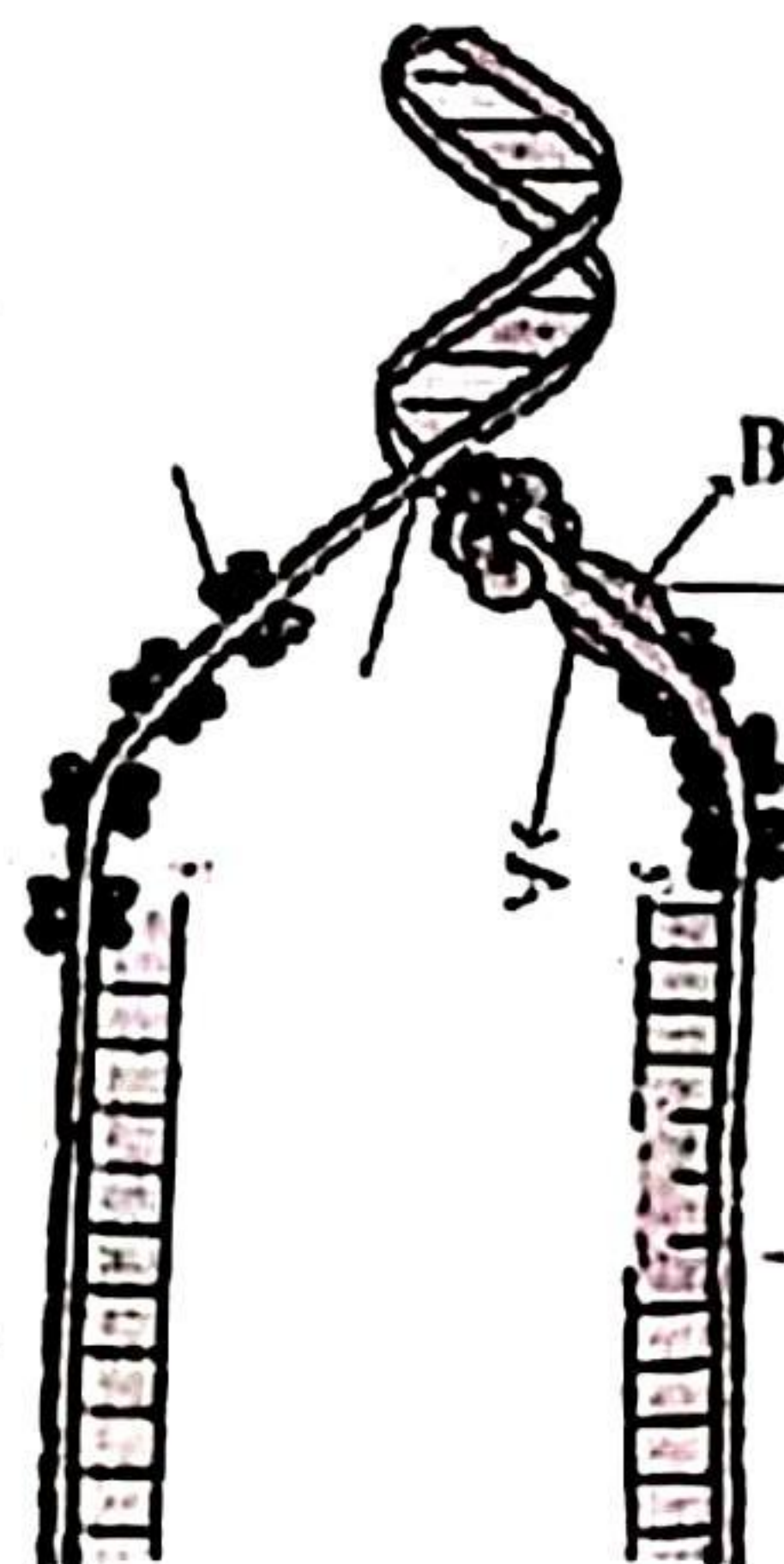
B = RNA Helicase

✓ (C) A = Single strand Binding Protein

B = DNA Helicase

(D) A = Lagging strand

B = Movement of Helicase



(Space for Rough Work)



# GUJCET Biology

## 2015 Paper Answer Key (Eng)

### BIOLOGY (ENG) SET - C

Question No.	Answer	Question No.	Answer
81	D	101	B
82	A	102	A
83	B	103	D
84	A	104	A
85	*	105	B
86	C	106	A
87	A	107	D
88	C	108	B
89	D	109	C
90	B	110	C
91	C	111	D
92	A	112	C
93	D	113	C
94	A	114	D
95	B	115	A
96	A	116	B
97	A	117	A
98	A	118	A
99	A	119	D
100	B	120	*