



# GUJCET-2022

**Time: 1 Hours**  
**Maximum Marks: 40**

## BIOLOGY

### General Instructions

1. The Biology test consists of 40 questions. Each question carries 1 mark. For each
2. correct response, the candidate will get **1** mark. For each incorrect response, **1/4** mark will be deducted. The maximum marks are **40**.
3. This Test is of 1 hour duration.

- (1) Which statements are true out of the following?
- (P) Endonuclease make cuts at specific positions within the DNA  
(Q) A stirred-tank reactor is usually square in shape  
(R) Bacterial cells must be first be made competent to take up DNA. This is done by treating them with divalent cation  $Mg^{++}$ .
- (A) Statements P, Q are true                      (B) Statements Q, R are true  
(C) Statement P is true                          (D) Statements P, Q & R are true
- (2) Statement–A: DNA cannot pass through cell membrane  
Reason–R: DNA is a hydrophobic molecule
- (A) Statement A and Reason R both are correct because R is the explanation of A  
(B) Statement A and Reason R both are correct because R is not the explanation of A  
(C) Statement A is correct and Reason R is wrong  
(D) Statement A is wrong and Reason R is correct
- (3) The Fragments of DNA can be separated by a technique known as.....
- (A) Gene gun                                      (B) Micro injection  
(C) Gel electrophoresis                      (D) Biolistics
- (4) .....infects the roots of tobacco plants and causes a great reduction in yield.
- (A) *Meloidogyne incognita*                      (B) *Bacillus thuringiensis*

- (C) *Wuchereria bancrofti* (D) *Ascaris lumbricoides*
- (5) In some children ADA deficiency can be cured by which transplantation?  
(A) Kidney (B) Liver (C) Bone marrow (D) Spleen
- (6) In Rosie cow, which is nutritionally more balanced product for babies?  
(A) Albumin (B) Alpha-lactalbumin  
(C) Beta-lactalbumin (D) Immunoglobulin
- (7) In which region maximum and minimum, mean annual precipitation is observed respectively?  
(A) Tropical forest, Desert (B) Tropical forest, Temperate forest  
(C) Grassland, Desert (D) Coniferous forest, Temperate forest
- (8) Which animal is capable of meeting all its water requirements through its internal fat oxidation?  
(A) Kangaroo (B) Snail (C) Kangaroo rat (D) Rat
- (9) If you were to count the number of insects feeding on a big tree, what kind of pyramid would you get?  
(A) Upright (B) Inverted (C) Oblique (D) Upright-inverted
- (10) Which stage of plant succession stage is shown in the given diagram?

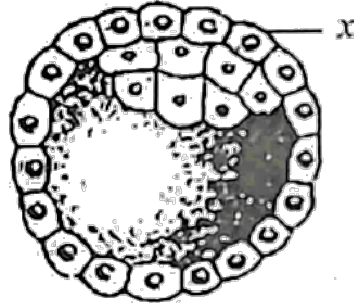


- (A) Reed-swamp stage (B) Submerged plant stage  
(C) Phytoplankton (D) Submerged free floating plant stage
- (11) "That within a region species richness increased with increasing explored area, but only upto a limit." Which naturalist has proposed this statement?  
(A) Alexander von Humboldt (B) David Tilman  
(C) Paul Ehrlich (D) Trashow
- (12) Which species extinction in the last 500 years was due to over exploitation by humans?  
(A) Steller's sea cow (B) Dodo  
(C) Quagga (D) Thylacine

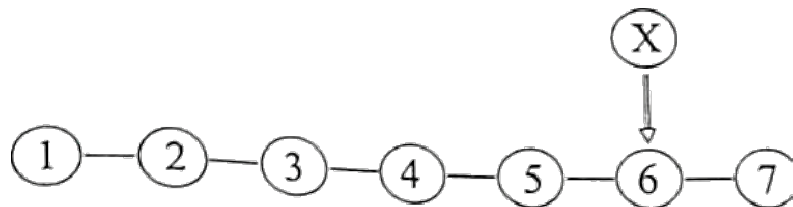
- (13) Which nutrient is absent dirty water of sewage?  
 (A) Sodium (B) Ammonia (C) Nitrate (D) Copper
- (14) What is the unit of measurement of thickness of ozone layer?  
 (A) DO (B) DB (C) DU (D) DN
- (15) Absence of teeth, bifid tongue and mental retrdness are observed in.....  
 (A) Klinefelter's syndrome (B) Albinism  
 (C) Down's syndrome (D) Oral-facial-digital syndrome
- (16) Match the following. Choose the correct option.

Column-I		Column-II	
(i)	Conidia	(P)	Sponges
(ii)	buds	(Q)	Penicillium
(iii)	offset	(R)	Water hyacinth
(iv)	Gemmules	(S)	Hydra

- (A) (i-P), (ii-S), (iii-R), (iv-Q) (B) (i-Q), (ii-R), (iii-S), (iv-P)  
 (C) (i-Q), (ii-S), (iii-R), (iv-P) (D) (i-S), (ii-Q), (iii-P), (iv-R)
- (17) Chromosome numbers in rice leaf is  $\underline{X}$  and chromosome numbers in egg of rat is  $\underline{Y}$ .  
 (A)  $X = 24, Y = 21$  (B)  $X = 12, Y = 24$  (C)  $X = 34, Y = 21$  (D)  $X = 20, Y = 24$
- (18) Which type of carpel is observed in *Michelia*?  
 (A) Multicarpellary, syncarpous (B) Multicarpellary, apocarpous  
 (C) Bicarpellary, syncarpous (D) Bicarpellary, apocarpous
- (19) In water hyacinth and water lily, the pollination is carried out by which agent?  
 (A) Only insects (B) Only wind (C) Water (D) Insects or wind
- (20) In black pepper remnants of nucellus persistent is known as.....  
 (A) Perisperm (B) Endosperm (C) Embryo (D) Plumule
- (21) .....hormone acts on the sertoli cells and stimulates secretion of some factors which help in the process of spermiogenesis.  
 (A) LH (B) FSH (C) TSH (D) PIF
- (22) What indicates 'x' in the following diagram?



- (A) Blastomeres (B) Inner cell mass  
(C) Trophoblast (D) Uterine cells
- (23) Zona Pellucida is first observed in.....  
(A) Primary follicle (B) Secondary follicle  
(C) Tertiary follicle (D) Graffian follicle
- (24) The hormone releasing IUD is.....  
(A) LNG-20 (B) Cu-7 (C) Multiload 375 (D) Cu-T
- (25) In which ART method more than 8 blastomeres are transferred into the uterus to complete its further development?  
(A) GIFT (B) IUT (C) IUI (D) ZIFT
- (26) The blood group of Rameshbhai is B and his daughter's blood group is AB. What will be the blood group of his wife?  
(A) A or B (B) A or AB (C) B or O (D) A or O
- (27) "The behaviour of chromosomes was parallel to the behaviour of genes" was proposed by.....  
(A) Watson and Crick  
(B) Alfred Hershey and Martha Chase  
(C) Walter Sutton and Theodor Boveri  
(D) MacLeod and McCarty
- (28) Choose the correct triplet codon option for 'X'.



[Sickle cell HbS peptide]

- (A) GUG                      (B) GAG                      (C) GAU                      (D) GAA
- (29)** Histone proteins are rich in.....and.....amino acids.  
 (A) Lysine, Aspartic acid                      (B) Arginine, Tyrosine  
 (C) Lysine, Arginine                      (D) Glutamic acid, Lysine
- (30)** What is the correct sequence to transfer genetic material from virus to bacteria in Hershey-Chase experiment?  
 (A) Centrifugation-Infection-Blending  
 (B) Centrifugation -Blending-Infection  
 (C) Infection-Centrifugation-Blending  
 (D) Infection-Blending-Centrifugation
- (31)** In Meselson and Stahl's experiment if *E.coli* was allowed to grow for 80 minutes then what would be the proportions of light and intermediate density of DNA molecule respectively? (If *E.coli* divides in every 20 minutes)  
 (A) 2 : 2                      (B) 6 : 2                      (C) 12 : 2                      (D) 14 : 2
- (32)** The brain capacity of *Homo habilis* is.....  
 (A) 650cc – 800cc                      (B) 1350cc – 1400cc  
 (C) 1400cc – 1600cc                      (D) 900cc – 1200cc
- (33)** In Gir forest out of 100 individuals 40 individuals are recessive. Calculate the percentage of heterozygous progeny by Hardy-Weinberg principle.  
 (A) 36%                      (B) 16%                      (C) 48%                      (D) 24%
- (34)** The.....test confirmed the disease caused by salmonella typhi.  
 (A) W.B. Test                      (B) Widal Test                      (C) ELISA Test                      (D) PCR Test
- (35)** .....quickly reduce the symptoms of allergy.  
 (A) Adrenaline                      (B) Heparin                      (C) Serotonin                      (D) Histamine
- (36)** When ready-made antibodies are directly given to protect the body against foreign agents, it is called.....  
 (A) Cell mediated immunity                      (B) Cytoplasm mediated immunity  
 (C) Humoral immune response                      (D) Passive immunity
- (37)** Which of the following crop of Okra (Bhindi) is insect pest resistance?  
 (A) Pusa Gaurav                      (B) Pusa Sem                      (C) Pusa Sawani                      (D) Pusa Komal
- (38)** Which statement is incorrect for successful Bee-keeping?  
 (A) Selection of suitable location for keeping the beehives  
 (B) Knowledge of the nature and habits of bees  
 (C) Management of beehives during any season

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- (D) Catching and hiving of swarms
- (39)** Choose the correct option out of the following:
- (A) Streptokinase-immunosuppressive agent in organ transplant
  - (B) Acetic acid-*Aspergillus niger*
  - (C) Butyric acid-*Clostridium butylicum*
  - (D) Cyclosporine A-used as a 'clot buster' for removing clots from blood vessels
- (40)** What is the BOD value per litre in sewage water?
- (A) 200-400 mg    (B) 200-500 mg    (C) 400-500 mg    (D) 500-600 mg



## ANSWER KEY | GUJCET-BIOLOGY

1.	(C)	2.	(C)	3.	(C)	4.	(A)	5.	(C)	6.	(B)	7.	(A)	8.	(C)
9.	(B)	10.	(B)	11.	(A)	12.	(A)	13.	(D)	14.	(C)	15.	(D)	16.	(C)
17.	(A)	18.	(B)	19.	(D)	20.	(A)	21.	(B)	22.	(C)	23.	(A)	24.	(A)
25.	(B)	26.	(B)	27.	(C)	28.	(A)	29.	(C)	30.	(D)	31.	(D)	32.	(A)
33.	(C)	34.	(B)	35.	(A)	36.	(D)	37.	(C)	38.	(C)	39.	(C)	40.	(A)

### Difficulty Level

Easy	29
Medium	6
Difficult	5

### Analysis:

#### Chapter wise questions

Name of the Chapter	Number of questions
Chapter 1 : Reproduction in Organisms	2
Chapter 2 : Sexual Reproduction in Flowering Plants	3
Chapter 3 : Human Reproduction	3
Chapter 4 : Reproductive Health	2
Chapter 5 : Principles of Inheritance and Variation	4
Chapter 6 : Molecular Basis of Inheritance	3
Chapter 7 : Evolution	2
Chapter 8 : Human Health and Disease	3
Chapter 9 : Strategies for Enhancement in Food Production	2
Chapter 10 : Microbes in Human Welfare	1
Chapter 11 : Biotechnology : Principles and Processes	3



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Chapter 12 : Biotechnology and its Applications	3
Chapter 14 : Ecosystem	2
Chapter 13 : Organisms and Populations	2
Chapter 15 : Biodiversity and Conservation	2
Chapter 16 : Environmental Issues	3

