

## **EVERYDAY SCIENCE : BIOLOGY -NO.5**

*Time: 30 minutes*

*Marks: 100*

1. Man cannot digest cellulose whereas cows can do so, because
  - A. their gut contains certain bacterial capable of digesting cellulose
  - B. they have a many chambered stomach
  - C. they have efficient grinding molars
  - D. they produce an enzyme cellulose which can digest cellulose
2. Scratching eases itching because
  - A. it removes the outer dust in the skin
  - B. it kills the germs
  - C. it stimulates certain nerves which direct the brain to increase the production of antihistaminic chemicals
  - D. it suppresses the production of enzymes which cause itching
3. Match List I with List II and select the correct answer using the codes given below the lists:

List I	List II
a) Islets of Langerhans	1) Calcitonin
b) Pituitary gland	2) Epinephrine
c) Thyroid gland	3) Growth hormone
d) Adrenal gland	4) Insulin

	a	b	c	d
A.	4	3	2	1
B.	4	3	1	2
C.	3	4	1	2
D.	3	2	4	1
4. Three communicable diseases prevalent in developing countries caused by unsafe drinking water and bad sanitation are
  - A. acute diarrhoea, cancer and gout
  - B. malaria, acute diarrhoea and arthritis
  - C. onchocerciasis, leukaemia and arthritis
  - D. rheumatism, malaria and AIDS
5. In the case of test-tube babies
  - A. egg is fertilised in the uterus
  - B. embryo completes its development in a test tube
  - C. embryo is placed in uterus after two months
  - D. egg is fertilised outside mother's body
6. The blood pressure values of four persons are given below: Who among the following has normal blood Pressure?

a) Mrs. Z	b) Mr. X	c) Mrs. Y	d) Mr. Y
A. Mrs. X 90 / 60	B. Mr. X 60 / 120	C. Mr. Y 20 / 80	D. Mrs. Y 140 / 100
7. The theory of 'Jumping genes' was propounded by
  - A. Gregar Johann Mendel
  - B. Thomas Hunt Morgan
  - C. Barbara Mc Clintock
  - D. Watson and Crick

8. In the balanced dietaries for a day of an adult working man, weights of carbohydrate food and total protein food (both superior and inferior) should be in order of  
 A. 600gm and 420gm respectively      B. 600gm and 600gm respectively  
 C. 420gm and 600gm respectively      D. 420gm and 420gm respectively
9. The pitch of the voice of women is in general  
 A. higher than that of men      B. marginally lower than that of men  
 C. much lower than that of men      D. the same as that of men
10. The following layers are found in the structure of the eye:  
 1. Conjunctiva      2. Choroid      3. Retina      4. Sclerotic  
 The correct sequence of these layers from the outer to inner is  
 A. 4, 1, 3, 2      B. 4, 1, 2, 3      C. 1, 4, 2, 3      D. 1, 4, 3, 2
11. The heart of human embryo, starts beating  
 A. in the first week of its development      B. in the third week of its development  
 C. in the fourth week of its development      D. in the sixth week of its development
12. Phenylketonuria is an example of an inborn error of metabolism. This error refers to  
 A. hormonal over production      B. atrophy of endocrine glands  
 C. inherited lack of an enzyme      D. non-disjunction
13. Which one of the following is the best description of a balanced diet?  
 A. The food that is rich in vitamins  
 B. The food that supplies all the essential nutrients in amounts that meet our nutritional needs  
 C. The food that provides energy to maintain the body at its normal temperature  
 D. The food that provides the energy to maintain the basal metabolism of the body
14. Haemoglobin is dissolved in the plasma of  
 A. frog      B. fish      C. man      D. earthworm
15. Even though an animal is fed with carbohydrate-rich diet, its blood sugar concentration tends to remain constant. This is on a account of the fact that in the case of an animal  
 A. hormones of pituitary glands control metabolic process  
 B. hormones of pancreas cause such a condition  
 C. blood sugar is readily absorbed by live  
 D. glucose undergoes autolysis
16. Which one of the following vitamins is considered to be a hormone?  
 A. A      B. B      C. C      D. D
17. Which one of the following is caused by the expression of recessive gene present on sex chromosome?  
 A. Rheumatism      B. Nervous dystrophy  
 C. Muscular dystrophy      D. Cerebral haemorrhages
18. Organism that lives at the air-water interface is called  
 A. Benthos      B. Nekton      C. Neuston      D. Plankton

19. Which are the two bones that participate in the ball and socket joint of the forelimb in man?  
 A. Clavicle and Scapula  
 B. Ulna and Clavicle  
 C. Humerus and Scapula  
 D. Humerus and Clavicle
20. Match List I with List II and select the correct answer using the codes given below the lists:  
 List I  
 a) Tsetse fly  
 b) Aedes mosquito  
 c) Water snail  
 d) Sand-flies  
 List II  
 1) Yellow fever  
 2) Sleeping sickness  
 3) Kala-azar  
 4) Biharzia  
 Codes:  

	a	b	c	d
A.	1	2	4	3
B.	3	1	4	2
C.	2	1	4	3
D.	4	2	3	1
21. *Plasmodium vivax* causes  
 A. Quartan fever  
 B. Benign fever  
 C. Malignant malaria  
 D. Mild malaria
22. Which of the following human fossils was found in India?  
 A. *Homo rudolfensis*  
 B. *Australopithecus*  
 C. *Homo erectus*  
 D. *Homo habilis*
23. Mark the correct statements:  
 A. Mammals have mammary glands, hairs, pinna, nails  
 B. Mammals have mammary glands, pinna, pectan, hairs  
 C. Mammals have mammary glands, pinna, hairs diaphragm  
 D. Mammals have mammary glands, teeth, pinna, sinus venosus
24. The most primitive molluscan is  
 A. Chiton  
 B. Neopilina  
 C. Patella  
 D. Unio
25. Mark the correct statement:  
 A. The central cavity of Hydra is centrocoel  
 B. The central cavity of Hydra is gastrocoel  
 C. The central cavity of Hydra is coelenteron  
 D. The central cavity of Hydra is gastrovascular cavity
26. Identify the correct sequence of the pace-making system in human heart.  
 A. A.V.node - S.A.node - Purkinji system - Bundle of His  
 B. A.V.node - S.A.node - Bundle of His - Purkinji system  
 C. S.A.node - A.V.node - Bundle of His - Purkinji system  
 D. S.A.node - A.V.node - Purkinji system - Bundle of His
27. What is the correct sequence of the lifecycle of fern?  
 A. Spore - sporophyte - gamete - gametophyte  
 B. Zygote - gametophyte - sporophyte - spore  
 C. Zygote - gametophyte - spore - sporophyte  
 D. Zygote - sporophyte - spore - gametophyte

28. Match List I with List II and select the correct answer using the codes given below the lists

List I

- a) Vegetal pole
- b) Blastomere
- c) Parthenogenesis
- d) Janus green

Codes:

	a	b	c	d
A.	1	3	2	4
B.	1	2	4	3
C.	1	2	3	4
D.	1	3	4	2

List II

- 1) cell of blastula
- 2) Development without fertilization
- 3) Echinoderm egg
- 4) Yolk

29. Consider the following statements:

Assertion (A) : In man urine is filtered in malpighian capsule

Reason (R) : Colloidal osmotic pressure of blood protein is responsible for urine filtration.

Now select your answer according to the codes given below:

- A. Both A & R are true and R is the correct explanation of A
- B. Both A & R are true, but R is not the correct explanation of A
- C. A is true, but R is false
- D. A is false, but R is true

30. A plant cell differs from an animal cell in the absence of

- A. Mitochondria
- B. Centrioles
- C. Ribosomes
- D. Endoplasmic reticulum

31. Most of the red, blue and purple colours are due to a pigment called

- A. Anthocyanin
- B. Carotene
- C. Chlorophyll
- D. Xanthophyll

32. All unicellular animals and plants are put under the group

- A. Protozoa
- B. Monera
- C. Protista
- D. Prokaryota

33. Human body needs a constant supply of proteins to survive. The first part of the digestive system to begin digesting proteins is

- A. mouth
- B. stomach
- C. small intestines
- D. large intestines

34. Which of the following is not a constituent of DNA molecule?

- A. Adenine
- B. Cytosine
- C. Thymine
- D. Uracil

35. The normal choloesterol level in human blood is

- A. 80-120 mg%
- B. 120-140 mg%
- C. 180-220 mg%
- D. 220-240 mg%

36. Match List I with List II and select the correct answer using the codes given below:

List I

- a) Vitamin A
- b) Vitamin B
- c) Vitamin D
- d) Vitamin E

Codes:

	a	b	c	d
A.	3	4	1	2

List II

- 1) Antirachitic
- 2) Antisterilitic
- 3) Antixerophthalmic
- 4) Antineuritic

- |    |   |   |   |   |
|----|---|---|---|---|
| B. | 2 | 3 | 4 | 1 |
| C. | 4 | 2 | 3 | 1 |
| D. | 3 | 1 | 2 | 4 |

37. Identify the correct sequence of protein synthesis  
 A. Polyribosomes - Amino acid + tRNA - Polypeptide - Messenger RNA  
 B. Polypeptide - Polyribosomes - Messenger RNA - Amino acid + tRNA  
 C. Messenger RNA - Polyribosomes - Amino acid + tRNA - Polypeptide  
 D. Messenger RNA - Amino acid + tRNA - Polypeptide - Polyribosomes
38. Haversian canals are found in  
 A. Cartilages  
 B. Water vascular system  
 C. Long bones of mammals  
 D. Spinal cord
39. Match List I with List II and select the correct answer using the codes given below:
- |                      |                           |
|----------------------|---------------------------|
| List I               | List II                   |
| a) Free martins      | 1) Speman                 |
| b) Organisers        | 2) Steptoe and Edwards    |
| c) Rh-factor         | 3) Lillie                 |
| d) Test -tube babies | 4) Landsteiner and Wiener |
- Codes:
- |    |   |   |   |   |
|----|---|---|---|---|
|    | A | B | C | D |
| a. | 2 | 1 | 4 | 3 |
| b. | 3 | 2 | 1 | 4 |
| c. | 4 | 1 | 2 | 3 |
| d. | 3 | 1 | 4 | 2 |
40. Lethal genes are much less common in haploid organisms than in diploids, because  
 A. Haploids are usually smaller than the diploids  
 B. There are more diploids around us than there are haploids  
 C. In halploids a gene is expressed even in a single dose  
 D. Of the occurrence of irregular meiosis in haploids
41. Reduction in chromosome number occurs after  
 A. Mitosis  
 B. Amitosis  
 C. Meiosis  
 D. Linkage
42. Adenophysis is a part of  
 A. Kidney  
 B. Pituitary  
 C. Pancreas  
 D. Thyroid
43. Gemma cup is present in  
 A. Riccia  
 B. Marchantia  
 C. Anthoceros  
 D. Funaria
44. Match List I with List II and select the correct answer by using the codes given below the lists:
- |                    |                     |
|--------------------|---------------------|
| List I (Name)      | List II (Functions) |
| a) Longest Muscle  | 1) Stapedius        |
| b) Largest Muscle  | 2) Sartorius        |
| c) Smallest Muscle | 3) Jaw muscle       |

d) Stronger Muscle  
Codes:

	a	b	c	d
A.	2	3	1	4
B.	2	4	1	3
C.	2	4	3	1
D.	4	3	2	1

4) Gluteus maximus

45. Which one of the following is an endocrine gland of human organ?  
A. Gall Bladder      B. Liver      C. Testis      D. Breast
46. Given below are two statements one labelled as Assertion (A) and the other labelled as Reason (R):  
Assertion (A) : Balanced diet is one which gives us correct proportions of carbohydrates, proteins, fats, minerals and vitamins to provide enough energy and enough material for growth and other activities of the body.  
Reason (R) : The amount of each substance required depends on age, sex, occupation of the individuals and on the climatic conditions of the place where one lives  
In the context of the above two statements which one of the following is correct?  
A. Both (A) and (R) are true, and (R) is the correct explanation of (A)  
B. Both (A) and (R) are true, but (R) is not the correct explanation of (A)  
C. (A) is true, but (R) is false      D. (A) is false, but (R) is true
47. The nutrient that are essential for synthesis of haemoglobin would include  
A. Calcium, phosphorus and iron      B. Vitamin A and protein  
C. Vitamin B<sub>12</sub>, iron and folic acid      D. B vitamins and iron
48. Haemophilia is a genetic disorder which leads to  
A. decrease in haemoglobin level      B. rheumatic heart disease  
C. decrease in WBC      D. non-clotting in blood
49. From the point of evolution, the most significant feature of meiosis is  
A. Gamete production      B. Genetic recombination  
C. Segregation      D. Reduction of chromosome number
50. Match List I with List II and select the correct answer using the codes given below the lists:  
List I (Disease)  
a) Malaria  
b) Poliomyelitis  
c) Tuberculosis  
d) Ringworm  
Codes:  
List II (Organism)  
1) Fungi  
2) Bacteria  
3) Virus  
4) Protozoan
- |    | a | b | c | d |
|----|---|---|---|---|
| A. | 4 | 3 | 2 | 1 |
| B. | 4 | 3 | 1 | 2 |
| C. | 3 | 4 | 1 | 2 |
| D. | 3 | 4 | 2 | 1 |
51. Cycling of elements between living and non-living components of the biosphere is known as  
A. Biological cycles      B. Biogeochemical cycles      C. Biogeocoenosis      D. Geobiocoenosis

52. The sequencing of the entire genome (the totality of all genes) of an organism was completed in 1996. The organism was:  
 A. albino mouse    B. yeast    C. human being    D. *plasmodium vivax*
53. The natural wax and lac are obtained as  
 A. Petroleum products    B. Resins of forest plants  
 C. Byproducts of sugar industry    D. Insect secretions
54. Consider the following statements about the liver:  
 I. It secretes bile which helps in the digestion of fat.  
 II. It assists in the transport of oxygen from one part of the body to the other.  
 III. It acts as a storage organ of high energy molecules such as fat.  
 IV. It acts as a storage organ for glycogen.  
 A. I and III are correct    B. I and IV are correct  
 C. II and IV are correct    D. I, II and III are correct
55. Consider the following statements:  
 Assertion (A) : Ecosystem is a functional system which, in a balanced condition, is self sufficient and self regulated.  
 Reason (R) : Ecosystem has a natural tendency to counteract in order to maintain the functional balance.  
 Of these statements:  
 A. Both A and R are true and R is the correct explanation A  
 B. Both A and R are true, but R is not the correct explanation of A  
 C. A is true, but R is false    D. A is false, but R is true
56. Nutritive value of food stuff is increased by  
 A. canning    B. enrichment    C. fortification    D. pasteurization
57. The pituitary gland by virtue of its tropic hormones controls the secretory activity of other endocrine glands. Which one of the following endocrine glands can function independent of the pituitary gland?  
 A. Thyroid    B. Gonads    C. Adrenals    D. Parathyroid
58. We have four types of teeth. What is the correct order in which they appear in man?  
 A. Premolar, Molar, Canine, Incisor    B. Incisor, Premolar, Canine, Molar  
 C. Premolar, Canine, Molar, Incisor    D. Incisor, Canine, Premolar, Molar
59. The main difference between vaccine and toxoid is that vaccines are  
 A. live pathogens administered in the body in small amounts to produce immunity whereas toxoids are killed organisms  
 B. those pathogenic organisms that are administered in the body orally whereas toxoids are administered by injection  
 C. the toxins are produced by viruses while toxoids are produced by bacteria  
 D. killed organisms or attenuated pathogenic agents whereas toxoids are detoxified toxins of pathogen
60. Match List I with List II and select the correct answer:  

List I (Organalle)	List II (Function)
a) Cell wall	1) Controls the movement of substances
b) Plasma membrane	2) Provides shape
c) Ribosome	3) Protein synthesis

#### 4) Secretion

#### 4) Secretion

61. An example of biotechnology is the
  - A. application of modern technology to understand the living systems
  - B. construction of plants to produce fodder for animals
  - C. manufacturing equipment for the study of micro-organisms
  - D. using micro-organisms to synthesise insulin
62. Oxygen transpiration in a human body takes place through
  - I. Blood
  - II. Lungs
  - III. Tissue
  - A. I, II, III
  - B. III, I, II
  - C. II, I, III
  - D. I, III, II
63. Corpus luteum is a mass of cells found in
  - A. brain
  - B. ovary
  - C. pancreas
  - D. spleen
64. Which one of the following theories was proposed by A.I. Oparin and J.B.S. Haldane?
  - A. Biochemical theory of origin of life
  - B. Life beget life
  - C. Chromosome theory of inheritance
  - D. Theory of natural selection
65. In brain, the site for intelligence, memory and emotion is present in
  - A. cerebrum
  - B. cerebellum
  - C. medulla
  - D. hypothalamus
66. The double helix structure of DNA molecule was proposed by
  - A. James Waston and Francis Crick
  - B. Max Perutz and Maurice Wilkins
  - C. Rosalind Franklin and Maurice Wilkins
  - D. Hargobind Khorana and Arthur Kornberg
67. The hormone which regulates the basal metabolism in our body is secreted from
  - A. Pituitary
  - B. Thyroid
  - C. Adrenal cortex
  - D. Pancreas
68. Which one of the following provides a direct evidence in favour of organic evolution?
  - A. Homologous structures
  - B. Fossils
  - C. Embryonic stages
  - D. Analogous structures
69. Blood is classified biochemically as a
  - A. cell
  - B. liquid
  - C. tissue
  - D. cartilage
70. Which of the following group of compounds constitute carbohydrate?
  - A. Fats and sugar
  - B. Fats, sugar and proteins
  - C. Starch, sugar and proteins
  - D. 'Starch' and sugar
71. The smallest blood vessel is called
  - A. Vena cava
  - B. Artery
  - C. Capillary
  - D. Aorta



72. Any change in the sequence of nucleotides in DNA is known as  
 A. Induction              B. Mutation              C. Cloning              D. Replacement
73. Warm-blooded animals maintain a high body temperature for faster  
 A. digestion              B. breathing              C. breeding              D. movement
74. Man's nearest relative in animal world is  
 A. The common rhesus monkey              B. Gorilla  
 C. Chimpanzee              D. Gibbon
75. The selection of a dairy bull should be based on  
 A. progeny testing              B. family performance              C. height              D. weight
76. A post-mortem study usually involves an analysis of liver. This is so because the liver shows a fairly correct picture of the dead person's  
 A. age              B. glycogen content              C. food taken by him              D. history of illness
77. When should be blood sample of a patient be taken for best test of malarial parasites?  
 A. An hour before the usual rise of temperature  
 B. When the body temperature rises with vigour  
 C. When the temperature comes down to normal  
 D. A few hours after the temperature returns to normal
78. A person has taken a large amount of meat which contains high protein. His urine will contain more of  
 A. Glycogen              B. Glucose              C. Creatinine              D. Urea
79. Decrease in white blood corpuscles results in  
 A. decrease in antigens              B. decrease in antibodies  
 C. increase in antibodies              D. No change
80. Consider the following functions:  
 I. Regulating the loss of excess water from the body  
 II. Removal of waste products from blood  
 III. Maintaining the balance of the body  
 IV. Maintaining a constant composition of blood  
 The main function(s) of the kidney would include  
 A. I alone              B. I and II              C. II, III and IV              D. I, II, III and IV
81. Which part of the human body is first adversely affected by nuclear radiation?  
 A. Eyes              B. Lungs              C. Skin              D. Bone marrow
82. Which one of the following symptoms of nutritional deficiency disorders is specific to vitamin C deficiency?  
 A. Cracks on lips              B. Spongy bleeding gums  
 C. Pale conjunctivae              D. Rashes on skin

83. Pituitary is called a master gland because
  - A. it is situated in the brain
  - B. it controls other glands
  - C. it is the largest in size
  - D. it secretes many hormones
84. Serum differs from blood plasma in that the former lacks
  - A. WBC
  - B. RBC
  - C. Fibrinogen
  - D. Glucose
85. An enzyme is a substance that can convert complex organic substances into simple ones. It is
  - A. a fat
  - B. a protein
  - C. a mineral
  - D. a carbohydrate like sugar
86. The main function of white blood cells in the body is to
  - A. carry oxygen
  - B. help in clot formation
  - C. produce more red cells
  - D. protect body against diseases
87. Meninges are
  - A. membranes covering the heart
  - B. connective tissue membranes covering the brain
  - C. secretions of the pancreas
  - D. myelin sheath on the nerve fibre
88. Muscles of which of the following parts of the body are the strongest?
  - A. Thigh
  - B. Wrist
  - C. Finger
  - D. Jaw
89. The blood is oxygenated and purified in which of the following parts of the human body?
  - A. Kidney
  - B. Lungs
  - C. Liver
  - D. Heart
90. What is the general shape of the bacteria?
  - A. Spheres
  - B. Spirals
  - C. Rods
  - D. Cubes
91. A woman's reproductive capacity lasts from the age of puberty to about
  - A. 45-50 years
  - B. 55-60 years
  - C. 40-45 years
  - D. 60-65 years
92. All of the following food lack vitamin except
  - A. Cheese
  - B. Milk
  - C. Meat
  - D. Rice
93. Which one of the following in the bloodstream is reduced most by excessive vomiting and diarrhoea?
  - A. Calcium
  - B. Sodium
  - C. Potassium
  - D. Iron
94. The largest cell in the human body is
  - A. Nerve cell
  - B. Muscle cell
  - C. Liver cell
  - D. Kidney cell
95. Which one of the following is the smallest gland in the body?
  - A. adrenal
  - B. thyroid
  - C. pancreas
  - D. pituitary
96. In which of the following human organs does digestion of starch in our diet start?
  - A. Intestine
  - B. Liver
  - C. Mouth
  - D. Stomach
97. The germplasm theory is related to
  - A. Mendel
  - B. Weismann
  - C. Darwin
  - D. Lamarck
98. Which of the following is the principal organ of digestion and absorption of food in our body?
  - A. Large intestine
  - B. iver
  - C. Pancreas
  - D. Small intestine

99. The number of amino acids known so far, is  
 A. 12                      B. 24                      C. 32                      D. 42
100. Antigens are  
 A. Carbohydrates    B. Fats                      C. Hormones                      D. Thyroid

### ANSWERS

- |       |       |       |        |       |       |       |       |
|-------|-------|-------|--------|-------|-------|-------|-------|
| 1. A  | 2. B  | 3. B  | 4. D   | 5. D  | 6. B  | 7. C  | 8. A  |
| 9. A  | 10. C | 11. D | 12. C  | 13. B | 14. D | 15. B | 16. D |
| 17. C | 18. B | 19. C | 20. C  | 21. D | 22. B | 23. D | 24. A |
| 25. A | 26. D | 27. D | 28. C  | 29. D | 30. B | 31. A | 32. C |
| 33. B | 34. D | 35. A | 36. A  | 37. D | 38. C | 39. D | 40. C |
| 41. C | 42. B | 43. A | 44. A  | 45. C | 46. A | 47. C | 48. D |
| 49. B | 50. A | 51. B | 52. C  | 53. D | 54. B | 55. A | 56. B |
| 57. D | 58. D | 59. C | 60. A  | 61. A | 62. C | 63. B | 64. A |
| 65. A | 66. A | 67. B | 68. B  | 69. C | 70. D | 71. C | 72. B |
| 73. C | 74. C | 75. C | 76. B  | 77. B | 78. D | 79. B | 80. B |
| 81. A | 82. B | 83. B | 84. C  | 85. B | 86. D | 87. B | 88. D |
| 89. B | 90. A | 91. A | 92. D  | 93. B | 94. A | 95. B | 96. C |
| 97. B | 98. D | 99. B | 100. D |       |       |       |       |