NEET–II (2016) TEST PAPER WITH ANSWER & SOLUTIONS (HELD ON SUNDAY 24th JULY, 2016)

1. Which one of the following generates new genetic combinations leading to variation ?
(1) Sexual reproduction
(2) Nucellar polyembryony
(3) Vegetative reproduction
(4) Parthenogenesis

Ans. (1)

2. Match **column-I** with **column-II** and select the correct option using the codes given below :

Column-I		Column-II	
(a)	Pistils fused together	(i)	Gametogenesis
(b)	Formation of gametes	(ii)	Pistillate
(c)	Hyphae of higher Ascomycetes	(iii)	Syncarpous
(d)	Unisexual female flower	(iv)	Dikaryotic

	a	b	c	d
(1)	i	ii	iv	iii
(2)	iii	i	iv	ii
(3)	iv	iii	i	ii
(4)	ii	i	iv	iii

Ans. (2)

3. In majority of angiosperms :
(1) reduction division occurs in the mgaspore mother cells
(2) a small central cell is present in the embryo sac
(3) egg has a filiform apparatus
(4) there are numerous antipodal cells

Ans. (1)

4. Pollination in water hyacinth and water lily is brought about by the agency of :
(1) birds (2) bats
(3) water (4) insects or wind

Ans. (4)

5. The ovule of an angiosperm is technically equivalent to :
(1) megaspore mother cell
(2) megaspore
(3) megasporangium
(4) megasporophyll

Ans. (3)

6. Taylor conducted the experiment to prove semiconservative mode of chromosome replication on :
(1) *Drosophila melanogaster*
(2) *E. coli*
(3) *Vinca rosea*
(4) *Vicia faba*

Ans. (4)

7. The mechanism that causes a gene to move from one linkage group to another is called :
(1) Translocation
(2) Crossing-over
(3) Inversion
(4) Duplication

Ans. (1)

8. The equivalent of a structural gene is :
(1) Operon
(2) Recon
(3) Muton
(4) Cistron

Ans. (4)

9. A true breeding plant is :
(1) near homozygous and produces offspring of its own kind
(2) always homozygous recessive in its genetic constitution
(3) one that is able to breed on its own
(4) produced due to cross-pollination among unrelated plants

Ans. (1)

10. Which of the following rRNAs acts as structural RNA as well as ribozyme in bacteria ?
(1) 23 S rRNA (2) 5.8 S rRNA
(3) 5 S rRNA (4) 18 S rRNA

Ans. (1)

11. Stirred-tank bioreactors have been designed for :
(1) availability of oxygen throughout the process
(2) ensuring anaerobic conditions in the culture vessel
(3) purification of product
(4) addition of preservatives to the product

Ans. (1)

12. A foreign DNA and plasmid cut by the same restriction endonuclease can be joined to form a recombinant plasmid using :
(1) Polymerase-III (2) Ligase
(3) *Eco* RI (4) *Taq* polymerase

Ans. (2)

13. Which of the following is **not** a component of downstream processing ?
(1) Preservation (2) Expression
(3) Separation (4) Purification
Ans. (2)

14. Which of the following restriction enzymes produces blunt ends ?
(1) *Xho* I (2) *Hind* III
(3) *Sal* I (4) *Eco* RV
Ans. (4)

15. Which kind of therapy was given in 1990 to a four year old girl with adenosine deaminase (ADA) deficiency ?
(1) Immunotherapy (2) Radiation therapy
(3) Gene therapy (4) Chemotherapy
Ans. (3)

16. How many hot spots of biodiversity in the world have been identified till date by Norman Myers ?
(1) 34 (2) 43 (3) 17 (4) 25
Ans. (1)

17. The primary producers of the deep-sea hydrothermal vent ecosystem are :
(1) Blue-green algae
(2) Coral reefs
(3) Green algae
(4) Chemosynthetic bacteria
Ans. (4)

18. Which of the following is correct for r-selected species ?
(1) Small number of progeny with small size
(2) Small number of progeny with large size
(3) Large number of progeny with small size
(4) Large number of progeny with large size
Ans. (3)

19. If '+' sign is assigned to beneficial interaction '–' sign to detrimental and '0' sign to neutral interaction, then the population interaction represented by '+' '–' refers to :
(1) Commensalism (2) Parasitism
(3) Mutualism (4) Amensalism
Ans. (2)

20. Which of the following is **correctly** matched ?
(1) *Parthenium hysterophorus* – Threat to biodiversity
(2) Stratification – Population
(3) Aerenchyma – *Opuntia*
(4) Age pyramid – Biome
Ans. (1)

21. Red list contains data or information on :
(1) threatened species
(2) marine vertebrates only
(3) all economically important plants
(4) plants whose products are in international trade
Ans. (1)

22. Which one of the following is **wrong** for fungi ?
(1) They are heterotrophic
(2) They are both unicellular and multicellular
(3) They are eukaryotic
(4) All fungi possess a purely cellulosic cell wall
Ans. (4)

23. Methanogens belong to :
(1) Dinoflagellates (2) Slime moulds
(3) Eubacteria (4) Archaebacteria
Ans. (4)

24. Select the **wrong** statement :
(1) Diatoms are chief producers in the oceans
(2) Diatoms are microscopic and float passively in water
(3) The walls of diatoms are easily destructible
(4) 'Diatomaceous earth' is formed by the cell walls of diatoms.
Ans. (3)

25. The lable of a herbarium shet **does not** carry information on :
(1) Local names (2) height of the plant
(3) date of collection (4) name of collector
Ans. (2)

26. Conifers are adapated to tolerate extreme environmental conditions because of :
(1) thick cuticle (2) presence of vessels
(3) broad hardy leaves (4) superficial stomata
Ans. (1)

27. Which one of the following statements is **wrong** ?
(1) Agar-agar is obtained from *Gelidium* and *Gracilaria*
(2) *Laminaria* and *Sargassum* are used as food
(3) Algae increase the level of dissolved oxygen in the immediate environment
(4) Algin is obtained from red algae, and carrageenan from brown algae.
Ans. (4)

28. The term 'polyadelphous' is related to :-
(1) Corolla (2) Calyx
(3) Gynoecium (4) Androecium
Ans. (4)

29. How many plants among *Indigofera, Sesbania, Salvia, Allium, Aloe*, mustard, groundnut, radish, gram and turnip have stamens with different lengths in their flowers ?
(1) Five (2) Six (3) Three (4) Four
Ans. (4)

30. Radial symmetry is found in the flowers of :-
(1) *Pisum* (2) *Cassia*
(3) *Brassica* (4) *Trifolium*
Ans. (3)

31. Free-central placentation is found in :-
(1) *Brassica* (2) *Citrus*
(3) *Dianthus* (4) *Argemone*
Ans. (3)

32. Cortex is the region found between :-
(1) Endodermis and pith
(2) Endodermis and vascular bundle
(3) Epidermis and stele
(4) Pericycle and endodermis
Ans. (3)

33. The balloon-shaped structures called tyloses :-
(1) Are extensions of xylem parenchyma cells into vessels
(2) Are linked to the ascent of sap through xylem vessels
(3) Originate in the lumen of vessels
(4) Characterize the sapwood
Ans. (1)

34. A non-proteinaceous enzyme is :-
(1) Ligase (2) Deoxyribonuclease
(3) Lysozyme (4) Ribozyme
Ans. (4)

35. Select the **mismatch** :-
(1) Protists-Eukaryotes
(2) Methanogens-Prokaryotes
(3) Gas vacuoles-Green bacteria
(4) Large central vacoules - Animal cells
Ans. (4)

36. Select the **wrong** statement :-
(1) Cyanobacteria lack flagellated cells.
(2) *Mycoplasma* is a wall-less microorganism
(3) Bacterial cell wall is made up of peptidoglycan.
(4) Pilli and fimbriae are mainly involved in motility of bacterial cells
Ans. (4)

37. A cell organelle containing hydrolytic enzymes is :-
(1) Ribosome (2) Mesosome
(3) Lysosome (4) Microsome
Ans. (3)

38. During cell growth, DNA synthesis takes place in:-
(1) G_2 phase (2) M phase
(3) S phase (4) G_1 phase
Ans. (3)

39. Which of the following biomolecules is common to respiration-mediated breakdown of fats, carbohydrates and proteins ?
(1) Pyruvic acid
(2) Acetyl CoA
(3) Glucose-6-phosphate
(4) Fructose 1,6-bisphosphate
Ans. (2)

40. A few drops of sap were collected by cutting across a plant stem by a suitable method. The sap was tested chemically. Which one of the following test results indicates that it is phloem sap ?
(1) Low refractive index (2) Absence of sugar
(3) Acidic (4) Alkaline
Ans. (4)

41. You are given a tissue with its potential for differentiation in an artificial culture. Which of the following pairs of hormones would you add to the medium to secure shoots as well as roots ?
(1) Auxin and abscisic acid
(2) Gibberellin and abscisic acid
(3) IAA and gibberellin
(4) Auxin and cytokinin
Ans. (4)

42. Phytochrome is a :-
(1) Lipoprotein (2) Chromoprotein
(3) Flavoprotein (4) Glycoprotein
Ans. (2)

43. Which is essential for the growth of root tip ?
(1) Ca (2) Mn (3) Zn (4) Fe
Ans. (1)

44. The process which makes major difference between C_3 and C_4 plants is :-
(1) Photorespiration (2) Respiration
(3) Glycolysis (4) Calvin cycle
Ans. (1)

45. Which one of the following statements in **not** correct?
(1) In potato, banana and ginger, the plantlets arise from the internodes present in the modified stem.
(2) Water hyacinth, growing in the standing water, drains oxygen from water that leads to the death of fishes.
(3) Offspring produced by the asexual reproduction are called clone
(4) Microscopic, motile asexual reproductive structures are called zoospores.
Ans. (1)

46. The part of nephron involved in active reabsorption of sodium is :-
(1) Bowman's capsule
(2) Descending limb of Henle's loop
(3) Distal convoluted tubule
(4) Proximal convoluted tubule
Ans. (4)

47. Which of the following is hormone releasing IUD ?
(1) Lippes loop (2) Cu7
(3) LNG-20 (4) Multiload 375
Ans. (3)

48. Which of the following is **incorrect** regarding vasectomy ?
(1) Vasa deferentia is cut and tied
(2) Irreversible sterility
(3) No sperm occurs in seminal fluid
(4) No sperm occurs in epididymis
Ans. (4)

49. Embryo with more than 16 blastomeres formed due to *in vitro* fretilization is transferred into :-
(1) Fimbriae (2) Cervix
(3) Uterus (4) Fallopian tube
Ans. (3)

50. Which of the following depicts the **correct** pathway of transport of sperms ?
(1) Rete testis → Vas deferens → Efferent ductules → Epididymis
(2) Efferent ductules → Rete testis → Vas deferens → Epididymis
(3) Rete testis → Efferent ductules → Epididymis → Vas deferens
(4) Rete testis → Epididymis → Efferent ductules → Vas deferens
Ans. (3)

51. Match **Column-I** with **Column-II** and select the correct option using the codes given below :-

Column I		**Column II**	
a	Mons pubis	i	Embryo formation
b	Antrum	ii	Sperm
c	Trophectoderm	iii	Female external genitalia
d	Nebenkern	iv	Graafian follicle

Codes :

	a	b	c	d
(1)	iii	i	iv	ii
(2)	i	iv	iii	ii
(3)	iii	iv	ii	i
(4)	iii	iv	i	ii

Ans. (4)

52. Several hormones like hCG, hPL, estrogen, progesterone are produced by :-
(1) Fallopian tube (2) Pituitary
(3) Ovary (4) Placenta
Ans. (4)

53. If a colour-blind man marries a woman who is homozygous for normal colour vision, the probability of their son being colour-blind is :-
(1) 0.75 (2) 1 (3) 0 (4) 0.5
Ans. (3)

54. Genetic drift operates in :-
(1) Non-reproductive population
(2) Slow reproductive population
(3) Small isolated population
(4) Large isolated population
Ans. (3)

55. In Hardy-Weinberg equation, the frequency of heterozygous individual is represented by :-
(1) pq (2) q^2 (3) p^2 (4) 2pq
Ans. (4)

56. The chronological order of human evolution from early to the recent is :-
(1) *Ramapithecus → Homo habilis → Australopithecus → Homo erectus*
(2) *Australopithecus → Homo habilis → Ramapithecus → Homo erectus*
(3) *Australopithecus → Ramapithecus → Homo habits → Homo erectus*
(4) *Ramapithecus → Australopithecus → Homo habilis → Homo erectus*
Ans. (4)

57. Which of the following is the **correct** sequence of events in the origin of life ?
I. Formation of protobionts
II. Synthesis of organic monomers
III. Synthesis of organic polymers
IV. Formation of DNA-based genetic systems
(1) II, III, I, IV (2) II, III, IV, I
(3) I, II, III, IV (4) I, III, II, IV
Ans. (1)

58. A molecule that can act as a genetic material must fulfill the traits given below, **except** :-
(1) It should be unstable structurally and chemically
(2) It should provide the scope for slow changes that are required for evolution
(3) It should be able to express itself in the form of 'Mendelian characters'
(4) It should be able to generate its replica
Ans. (1)

59. DNA-dependent RNA polymerase catalyzes transcription on one strand of the DNA which is called the :-

(1) Alpha strand (2) Antistrand

(3) Template strand (4) Coding strand

Ans. (3)

60. Interspecific hybridization is the mating of :-

(1) Superior males and females of different breeds

(2) More closely related individuals within same breed for 4-6 generations

(3) Animals within same breed without having common ancestors

(4) Two different related species

Ans. (4)

61. Which of the following is **correct** regarding AIDS causative agent HIV ?

(1) HIV is unenveloped retrovirus.

(2) HIV does not escape but attacks the aquired immune response.

(3) HIV is enveloped virus containing one molecule of single-stranded RNA and one molecule of reverse transcriptase.

(4) HIV is enveloped virus that contains two identical molecules of single-stranded RNA and two molecules of reverse transcriptase.

Ans. (4)

62. Among the following edible fishes, which one is a marine fish having rich source of omega-3 fatty acids ?

(1) Mrigala (2) Mackerel

(3) Mystus (4) Mangur

Ans. (2)

63. Match **Column –I** with **Column–II** and select the correct option using the codes given below

Column-I		**Column-II**	
(a)	Citric acid	(i)	Trichoderma
(b)	Cyclosporin A	(ii)	Clostridium
(c)	Statins	(iii)	Aspergillus
(d)	Butyric acid	(iv)	Monascus

Codes :

	a	**b**	**c**	**d**
(1)	i	iv	ii	iii
(2)	iii	iv	i	ii
(3)	iii	i	ii	iv
(4)	iii	i	iv	ii

Ans. (4)

64. Biochemical Oxygen Demand (BOD) may **not** be a good index for pollution for water bodies receiving effluents from :-

(1) Petroleum industry

(2) Sugar industry

(3) Domestic sewage

(4) Dairy industry

Ans. (1)

65. The principle of competitive exclusion was stated by :-

(1) MacArthur

(2) Verhulst and Pearl

(3) C. Darwin

(4) G.F. Gause

Ans. (4)

66. Which of the following National Parks is home to the famous musk deer or hangul?

(1) Eaglenest Wildlife Sanctuary, Arunachal Pradesh

(2) Dachigam National Park, Jammu & Kashmir

(3) Keibul Lamjao National Park, Manipur

(4) Bandhavgarh National Park, Madhya Pradesh

Ans. (2)

67. A lake which is rich in organic waste may result in:-

(1) Increased population of fish due to lots of nutrients.

(2) Mortality of fish due to lack of oxygen

(3) Increased population of aquatic organisms due to minerals

(4) Drying of the lake due to algal bloom

Ans. (2)

68. The highest DDT concentration in aquatic food chain shall occur in :-

(1) crab (2) eel

(3) phytoplankton (4) seagull

Ans. (4)

69. Which of the following sets of diseases is caused by bacteria?

(1) Tetanus and mumps

(2) Herpes and influenza

(3) Cholera and tetanus

(4) Typhoid and smallpox

Ans. (3)

70. Match **Column–I** with **Column–II** for housefly classification and select the correct option using the codes given below :

Column-I		Column-II	
a	Family	(i)	Diptera
b	Order	(ii)	Arthropoda
c	Class	(iii)	Muscidae
d	Phylum	(iv)	Insecta

Codes :

	a	b	c	d
(1)	iv	iii	ii	i
(2)	iv	ii	i	iii
(3)	iii	i	iv	ii
(4)	iii	ii	iv	i

Ans. (3)

71. Choose the **correct** statement.

(1) All reptiles have a three–chambered heart.

(2) All pisces have gills covered by an operculum.

(3) All mammals are viviparous.

(4) All cyclostomes do not possess jaws and paired fins.

Ans. (4)

72. Study the four statements (A–D) given below and select the two correct ones out of them :

(A) Definition of biological species was given by Ernst Mayr.

(B) Photoperiod does not affect reproduction in plants.

(C) Binomial nomenclature system was given by R.H. Whittaker.

(D) In unicellular organisms, reproduction is synonymous with growth.

The two **correct statements are**

(1) A and D (2) A and B

(3) B and C (4) C and D

Ans. (1)

73. In male cockroaches, sperms are stored in which part of the reproductive system?

(1) Testes (2) Vas deferens

(3) Seminal vesicles (4) Mushroom glands

Ans. (3)

74. Smooth muscles are :-

(1) Involuntary, cylindrical, striated

(2) Voluntary, spindle–shaped, uninucleate

(3) Involuntary, fusiform, non-striated

(4) Voluntary, multinucleate, cylindrical

Ans. (3)

75. Oxidative phosphorylation is :-

(1) Addition of phosphate group to ATP.

(2) Formation of ATP by energy released from electrons removed during substrate oxidation.

(3) Formation of ATP by transfer of phosphate group from a substrate to ADP

(4) Oxidation of phosphate group in ATP

Ans. (2)

76. Which of the following is the least likely to be involved in stabilizing the three–dimensional folding of most proteins?

(1) Hydrophobic interaction

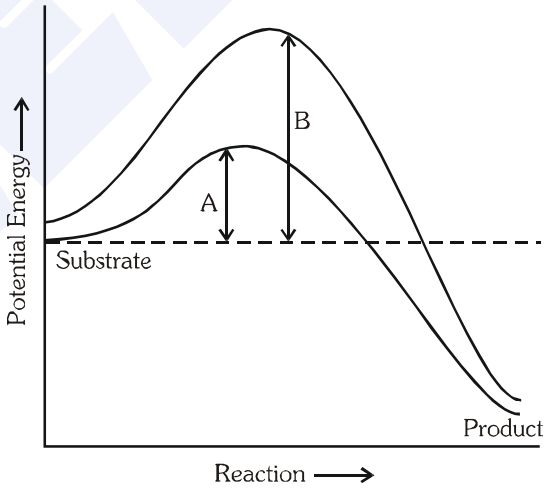
(2) Ester bonds

(3) Hydrogen bonds

(4) Electrostatic interaction

Ans. (2)

77. Which of the following describes the given graph **correctly**?



(1) Endothermic reaction with energy A in absence of enzyme and B in presence of enzyme

(2) Exothermic reaction with energy A in absence of enzyme and B in presence of enzyme

(3) Endothermic reaction with energy A in presence of enzyme and B in absence of enzyme

(4) Exothermic reaction with energy A in presence of enzyme and B in absence of enzyme.

Ans. (4)

78. When cell has stalled DNA replication fork, which checkpoint should be predominantly activated?

(1) M (2) Both G_2/M and M

(3) G_1/S (4) G_2/M

Ans. (3)

79. Match the stages of meiosis in **Column–I** to their characteristic features in **Column–II** and select the correct option using the codes given below :

Column-I		Column-II	
a	Pachytene	i	Pairing of homologous chromosomes
b	Metaphase-I	ii	Terminalization of chiasmata
c	Diakinesis	iii	Crossing over takes place
d	Zygotene	iv	Chromosomes align at equatorial plate

Codes :

	a	b	c	d
(1)	ii	iv	iii	i
(2)	iv	iii	ii	i
(3)	iii	iv	ii	i
(4)	i	iv	ii	iii

Ans. (3)

80. Which hormones do stimulate the production of pancreatic juice and bicarbonate?
(1) Cholecystokinin and secretin
(2) Insulin and glucagon
(3) Angiotensin and epinephrine
(4) Gastrin and insulin

Ans. (1)

81. The partial pressure of oxygen in the alveoli of the lungs is :-
(1) Less than that in the blood
(2) Less than that of carbon dioxide
(3) Equal to that in the blood
(4) More than that in the blood

Ans. (4)

82. Choose the **correct** statement.
(1) Photoreceptors in the human eye are depolarized during darkness and become hyperpolarized in response to the light stimulus.
(2) Receptors do not produce graded potentials.
(3) Nociceptors respond to changes in pressure.
(4) Meissner's corpuscles are thermo receptors.

Ans. (1)

83. Graves' disease is caused due to :-
(1) Hyposecretion of adrenal gland
(2) Hypersecretion of adrenal gland
(3) Hyposecretion of thyroid gland
(4) Hypersecretion of thyroid gland

Ans. (4)

84. Name the ion responsible for unmasking of active sites for myosin for cross–bridge activity during muscle contraction.
(1) Sodium (2) Potassium
(3) Calcium (4) Magnesium

Ans. (3)

85. Name the blood cells, whose reduction in number can cause clotting disorder, leading to exceassive loss of blood from the body.
(1) Neutrophils (2) Thrombocytes
(3) Erythrocytes (4) Leucocytes

Ans. (2)

86. Name a peptide hormone which acts mainly on hepatocytes, adipocytes and enhances cellular glucose uptake and utilization.
(1) Secretin (2) Gastrin
(3) Insulin (4) Glucagon

Ans. (3)

87. Osteoporosis, an age–related disease of skeletal system, may occur due to :-
(1) Decreased level of estrogen
(2) Accumulation of uric acid leading to inflammation of joints.
(3) Immune disorder affecting neuro–muscular junction leading to fatigue.
(4) High concentration of Ca^{++} and Na^{+}.

Ans. (1)

88. Serum differs from blood in :-
(1) Lacking clotting factors
(2) Lacking antibodies
(3) Lacking globulins
(4) Lacking albumins

Ans. (1)

89. Lungs do not collapse between breaths and some air always remains in the lungs which can never be expelled because :-
(1) There is a positive intrapleural pressure
(2) Pressure in the lungs is higher than the atomospheric pressure.
(3) There is a negative pressure in the lungs.
(4) There is a negative intrapleural pressure pulling at the lung walls

Ans. (4)

90. The posterior pituitary gland is **not** a 'true' endocrine gland because :-
(1) It is under the regulation of hypothalamus
(2) It secretes enzymes
(3) It is provided with a duct
(4) It only stores and releases hormones

Ans. (4)