PAPER-II

INSTRUCTIONS FOR CANDIDATES

1. Answer all questions.
2. All questions carry equal marks.
3. Only one answer is to be given for each question.
4. If more than one answers are marked, it would be treated as wrong answer.
5. Each question has four alternative responses marked serially as 1, 2, 3, 4. You have to darken only one circle or bubble indicating the correct answer on the Answer Sheet using BLUE BALL POINT PEN.
6. The OMR Answer Sheet is inside this Test Booklet. When you are directed to open the Test Booklet, take out the Answer Sheet and fill in the particulars carefully with blue ball point pen only.
7. 1/3 part of the mark(s) of each question will be deducted for each wrong answer. A wrong answer means an incorrect answer or more than one answers for any question. Leaving all the relevant circles or bubbles of any question blank will not be considered as wrong answer.
8. Mobile Phone or any other electronic gadget in the examination hall is strictly prohibited. A candidate found with any of such objectionable material with him/her will be strictly dealt as per rules.
9. Please correctly fill your Roll Number in O.M.R. Sheet. 5 Marks can be deducted for filling wrong or incomplete Roll Number.
10. If there is any sort of ambiguity/mistake either of printing or factual nature then out of Hindi and English Version of the question, the English Version will be treated as standard.

Warning: If a candidate is found copying or any unauthorized material is found in his/her possession, F.I.R. would be lodged against him/her in the Police Station and he/she would liable to be prosecuted. Department may also debar him/her permanently from all future examinations.

Do not open this Test Booklet until you are asked to do so.
1. Which of the following statements are correct?
A. Hilum is a notch at the inner surface of the kidney of mammals.
B. Nephridia are found in Annelida only.
C. Large loop of Henle is present in cortical nephrons of mammalian kidney.
D. Malpighian body includes Bowman’s capsule and glomerulus both.

The correct answer is
(1) A and B  (2) B and C  (3) C and D  (4) A and D

2. Which of the following are correctly matched?
A. Proximal – Resorption Convoluted of water and Tubule electrolytes
B. Henle’s loop – Maintenance of high osmolarity
C. Distal – Conditional Convoluted resorption of Tubule Na+ and water
D. Collecting duct – Maintenance of pH

The correct answer is
(1) A, B only  (2) A, B, C only  (3) B, C, D only  (4) A, B, C & D

3. Which of the following pairs is not correctly matched?
(1) Angina – Insufficient oxygen supply
(2) Emphysema – Alveolar damage
(3) Asthma – Inflammation
(4) Cretinism – Hyper-Thyroidism

4. Cartilaginous joints are found in which part of the human body?
(1) Between two vertebrae
(2) Knee
(3) Between the carpels
(4) Between metacarpals
5. Free nuclear endosperm is found in which of the following?
   (1) Coconut  (2) Groundnut
   (3) Sweet Pea  (4) Castor

6. Which of the following fruits is a false fruit?
   (1) Mango  (2) Apple
   (3) Blue berries  (4) Coconut

7. Which of the following is not true about female gametophyte of Angiosperms?
   (1) The eight nuclei are surrounded by cell walls.
   (2) Egg apparatus is located near micropylor end.
   (3) Antipodal cells are located at chalazal end.
   (4) A typical angiosperm embryo sac at maturity is six celled.

8. The species confined to a particular area and not found anywhere else, is called
   (1) Endangered species  (2) Threatened species
   (3) Endemic species  (4) Extinct species

9. The concept of linkage was proposed by
   (1) G.J. Mendal  (2) Bateson & Punnett
   (3) Hardy Weinberg  (4) Charles Darwin

10. When a pure recessive plant (tt) is crossed with F1 hybrid (Tt), it is called
    (1) Test cross  (2) Back cross
    (3) Double cross  (4) Linkage
11. Which of the following are correct about sex-determination in Human beings?
   A. Sex is determined by chromosomes.
   B. 22 + XX is female and 22 + XY is male.
   C. 21 + XX is female and 21 + XY is male.
   D. 22 + XO is female and 22 + YO is male.
   The correct answer is –
   (1) A and B both (2) A and C both
   (3) A and D both (4) A only

12. Australian marsupials are best examples of
   (1) Convergent evolution
   (2) Adaptive radiation
   (3) Parallel evolution
   (4) None of these

13. Which of the following cells secrete antibodies?
   (1) All leucocytes
   (2) All lymphocytes
   (3) B-lymphocytes
   (4) T-lymphocytes

14. Which of the following diseases cannot be prevented by vaccination?
   (1) Polio
   (2) Diphtheria
   (3) Pneumonia
   (4) Amoebiasis

15. Haemozoin, a toxin, is released in the blood after rupture of RBC’s in which of the following?
   (1) Typhoid
   (2) Malaria
   (3) Filariasis
   (4) Small Pox
16. Oncogenic virus causes which of the following diseases? 
   (1) Cancer  (2) Tuberculosis  (3) Diabetes  (4) Hypertension

17. Saprophytes are 
   (1) producers  (2) primary consumers  (3) secondary consumers  (4) decomposers

18. The pyramid of biomass of ocean ecosystem is generally 
   (1) uncertain  (2) upright  (3) inverted  (4) None of these

19. The products of ecosystem processes are called as 
   (1) Gross National Product  (2) Ecosystem services  (3) Productivity  (4) None of these

20. Under stressful conditions many zooplankton species in lakes and ponds are known to enter in a stage of suspended development, it is called 
   (1) Diapause  (2) Homeostasis  (3) Hibernation  (4) Aestivation
21. Which of the following is not an attribute of a population?
(1) Members of a population usually do not interact with other population.
(2) At any given time it has individuals of different ages.
(3) It has a sex-ratio.
(4) It has birth rates and death rates.

22. Mammals from colder climates generally have shorter ears and limbs to minimize heat loss. This is called
(1) Lamark’s theory
(2) Mendel’s law
(3) Leibig’s law
(4) Allen’s rule

23. Which of the following regulates amount of CO₂ in the atmosphere?
(1) Plants
(2) Animals
(3) Fossil fuel burning
(4) Oceans

24. Which of the following statements are true?
A. Rocks are natural reservoirs of phosphorus.
B. Pioneer species are those that invade bare area.
C. Species diversity does not change in ecological succession.
D. Trophic level of an organism can change.

The correct answer is
(1) A. B and D
(2) A and B
(3) B. C and D
(4) B and D
25. The amount of biomass produced per unit area over a time period by plants is called
   (1) primary production
   (2) productivity
   (3) net primary productivity
   (4) secondary productivity

26. When antibodies prepared against a disease causing organism/toxin are injected in the body, it is called
   (1) Artificial passive immunization
   (2) Artificial active immunization
   (3) Natural passive immunization
   (4) Natural active immunization

27. Which of the following statements is correct?
   (1) Peripatus has jointed legs.
   (2) Body cavity of acelomates is filled with botryoidal tissue.
   (3) Corals exhibit polymorphism.
   (4) Coelom is reduced in Mollusca.

28. Which of the following phyla is classified on the basis of their skull cavities?
   (1) Pisces (2) Amphibia
   (3) Reptilia (4) Aves

29. Which of the following statements is correct about class mammalia?
   (1) All the mammals are viviparous.
   (2) Duck-billed Platypus is a marsupial.
   (3) All the eutherians have external ear (pinna).
   (4) All the aquatic mammals live in oceans.
30. नीचे एनिमेलिया जगत में पाए जाने वाले संगठन के विभिन्न स्तर, उनके उदाहरण सहित दिए गए हैं। गलत युम का चयन कीजिए:
(1) कोशिकायु स्तर – स्पंज
(2) उत्तर-स्तर – सीलेंटरेट
(3) अंग-स्तर – अनिलिदिया
(4) अंग-तंत्र स्तर – इक्काइनोडिमिस

31. निम्नलिखित में से किसमें प्लेक्स्किड शक्ति पाए जाते हैं?
(1) इलास्मब्रैक मछलियाँ
(2) टीलियोस्ट मछलियाँ
(3) डिनोई
(4) लैटीमीरिया

32. निम्नलिखित में से कौन सा रेनाकुलेसी परिवार के पूष्प का लक्षण नहीं है?
(1) पंचभामी/पंचतंत्री पूष्प
(2) पुंखेसर अनन्त, स्वर्त्तंत्र/संलग्न, स्पुटनशील, बहिमुखी
(3) चचुदरी पूष्प
(4) जायंगबुहँ से स्वर्त्तंत्र काम्पल युक्त, आण्डाशय उद्धारमी एवम् एकक्षीय

33. निम्नलिखित में से कौन सा कठन एथियेसी कुल के बारे में सही नहीं है?
A. इसमें छत्राकार प्रकार का पुष्क्रम होता है।
B. बाह्यदल सामान्यतया पौंच अस्पष्ट दंत या एक संकु वृत्ताकार रित विंग के रूप में होता है।
C. 5 स्पष्ट दलपत्र, 5 पुंखेसरों के साथ एकांग दर क्रम में लगे होते हैं।
D. अंडाशय के ऊपर स्टाइपोलोपोडियम उपस्थित होता है।
सही उत्तर है –
(1) A. B एवं C (2) A. C एवं D
(3) A एवं B (4) A. B. C एवं D

30. Given below are the various levels of organization as met with in kingdom animalia along with their examples. Select the incorrect pair:
(1) Cellular level – Sponges
(2) Tissue level – Coelenterates
(3) Organ level – Annelids
(4) Organ-system – Echinoderms level

31. In which of the following placoid scales are found?
(1) Elasmobranch fishes
(2) Teleost fishes
(3) Dipnoi
(4) Latimeria

32. Which of the following is not a character of flower of family Ranunculaceae?
(1) Pentamerons flowers
(2) Stamens indefinite, free/adnate dehiscing, extrorse
(3) Tetramerous flowers
(4) Gynoecium with many free carpels, ovary superior and one celled

33. Which of the following statements is not true about family Apiaceae?
A. It has Umbel type of inflorescence.
B. Calyx is usually 5 inconspicuous teeth or a narrow circular ridge.
C. 5 distinct petals alternating with 5 stamens.
D. Stylus is present on the top of the ovary.

The correct answer is:
(1) A. B and C (2) A. C and D
(3) A and B (4) A. B. C and D
34. Which of the following is not a character of family Asteraceae flower?
   (1) Flowers are pentameric.
   (2) Flowers are epigynous.
   (3) Ovary is multilocular and superior.
   (4) Flowers have valvate aestivation.

35. Which of the following is not true for flowers of family Poaceae?
   (1) It’s floral formula in male is Br. Brl. % 5, P 3 (lodicules) A 3 G 2
   (2) Perianth is represented by two lodicules.
   (3) Flowers are zygomorphic and hypogynous.
   (4) Ovary is inferior and multilocular.

36. Which one of the following has no intermediate host?
   (1) Plasmodium
   (2) Tapeworm
   (3) Roundworm
   (4) Liverfluke

37. Which of the following mollusca is not used as food by man?
   (1) Oyster
   (2) Cuttle fish
   (3) Teredo
   (4) Mussels

38. Match Group I and II correctly:
   
   **Group – I**
   (a) Wheat
   (b) Ashwagandha
   (c) Groundnut
   (d) Rice

   **Group – II**
   (i) Arachis hypogea
   (ii) Oryza sativa
   (iii) Withania somnifera
   (iv) Triticum vulgare

   The correct answer is
   (a) (b) (c) (d)
   (1) (i) (ii) (iii) (iv)
   (2) (i) (ii) (iv) (iii)
   (3) (ii) (i) (iii) (iv)
   (4) (iv) (iii) (i) (ii)
39. Match the following plants with their part used for:

<table>
<thead>
<tr>
<th>Group – I</th>
<th>Group – II</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Tea</td>
<td>(i) Resin</td>
</tr>
<tr>
<td>(b) Cotton</td>
<td>(ii) Seeds</td>
</tr>
<tr>
<td>(c) Commiphora</td>
<td>(iii) Seed coat hair</td>
</tr>
<tr>
<td>(d) Coffee</td>
<td>(iv) Leaf</td>
</tr>
</tbody>
</table>

The correct answer is

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

40. Which of the following insects is not a pest of stored grains?

(1) Tribolium
(2) Calandra
(3) Pyrilla
(4) Tenebrio

41. Which of the following causes filariasis in man?

(1) Wuchereria
(2) Ancyclostoma
(3) Tape worm
(4) Liver fluke

42. Which of the following groups of Arthropods have two pairs of legs in every segment of their trunk and have cylindrical body?

(1) Centipede
(2) Millepede
(3) Prawn
(4) Spider

43. Cantharidin, an oil, is prepared from which of the following?

(1) Flowers of Cathararsus rosea
(2) Seeds of Cathararsus rosea
(3) Dried elytra of beetles
(4) Fish liver
44. Disaggregation of normal tissues for cell culture is usually done by which of the following?
(1) Polyethylene glycol
(2) Collagenase
(3) Dextrose solution
(4) Normal saline

45. When a foreign DNA segment is inserted into DNA molecules of a vector, it is called
(1) transposon
(2) promoter
(3) chimeric DNA
(4) shuttle vector

46. Laminar Air Flow is used for
(1) Glassware sterilization
(2) Media and other chemicals sterilization
(3) Instruments used sterilization
(4) The work-space environment sterilization

47. Polymerase chain reaction is usually used for DNA
(1) Hybridization
(2) Gene transfer
(3) Amplification
(4) DNA fingerprinting

48. The monosaccharides that comprise the major portion of honey are
(1) Glucose and sucrose
(2) Fructose and glucose
(3) Galactose and fructose
(4) Maltose and galactose
49. Noise Pollution (Regulation and Control) Act was implemented in
   (1) 1972   (2) 1984
   (3) 2000   (4) 2018

50. When plant succession begins in a rocky area, which of the following begins to grow first?
   (1) Lichens
   (2) Mosses
   (3) Ferns
   (4) Gymnosperms

51. A gas was released in an Indian city Bhopal in the environment, causing great health hazards on a large scale. Name of this gas is
   (1) Methane
   (2) Laughing gas
   (3) Methyl isocynate
   (4) Mustard gas

52. "Green House Effect" is related to which of the following cycle?
   (1) Phosphorus
   (2) Carbon dioxide
   (3) Nitrogen
   (4) Sulphur

53. Which of the following pollutant is likely to be present in the effluent of the tanneries?
   (1) Lead
   (2) Chromium
   (3) Fluoride
   (4) Cadmium

54. Sol-gel theory of pseudopodia formation in Amoeba was proposed by
   (1) Jennings
   (2) Berthold
   (3) Dellinger
   (4) Hyman
55. Perisarc of obelia is
   (1) Chitin layer secreted by ectoderm
   (2) Ectodermal cell layer
   (3) Ectoderm, mesogloea and endoderm together
   (4) Endoderm

56. Which of the following is not a part of female reproductive tract of Taenia?
   (1) Ootype    (2) Vagina
   (3) Uterus    (4) Cirrus sac

57. How many testes are present in Ascaris?
   (1) One    (2) One pair
   (3) Two pairs    (4) Many

58. The circular muscle layer of Pheretima's body wall contains which of the following pigments?
   (1) Porphyrin    (2) Chlorocruorin
   (3) Haemoglobin    (4) Haemocyanin

59. Where is peritrophic membrane present in Periplaneta?
   (1) in oral cavity    (2) in the mid-gut
   (3) outer to gut    (4) present around salivary glands

60. Salivary glands in Rana tigrina are
   (1) 1 pair    (2) 2 pairs
   (3) one    (4) Absent

61. Which of the following is not absent in Rabbit?
   (1) Right systemic arch
   (2) Renal portal system
   (3) Canine teeth
   (4) Left systemic arch
62. निम्नलिखित में से कोन सी प्रधानां ख़रेदे के नेत्रों से संबन्धित नहीं हैं?
(1) माइबोमियन प्रधानां
(2) काउपर प्रधानां
(3) लेक्रीमाल प्रधानां
(4) हार्डरियन प्रधानां

63. समूह-II एवं II में सही मेल कीजिए:

<table>
<thead>
<tr>
<th>समूह-1</th>
<th>समूह-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) सूप्राट्रोक्लायर</td>
<td>(i) रेडियस अल्या फॉरामन</td>
</tr>
<tr>
<td>(b) प्रज्वलिका शिखर</td>
<td>(ii) ह्यूमरस क्रेस्ट</td>
</tr>
<tr>
<td>(c) अंस उल्लूकुल</td>
<td>(iii) टीबिओफिबुला</td>
</tr>
<tr>
<td>(d) अवगुहरूपी</td>
<td>(iv) अंस मेखला खांच</td>
</tr>
</tbody>
</table>

सही उत्तर है -
(a) (b) (c) (d)
(1) (ii) (iii) (iv) (i)
(2) (iii) (ii) (iv) (i)
(3) (ii) (i) (iv)
(4) (iv) (i) (iii) (ii)

64. वह प्रावस्था जिसमें विकासशील ध्रुव के विभिन्न भागों सतह पर अपना फाइनल स्थान ग्रहण कर लेते हैं, कहलाती है?
(1) विदलन (2) ब्लास्टुला
(3) गैस्टुला (4) नीरुला

62. Which of the following glands are not associated with rabbits' eye?
(1) Meibomian glands
(2) Cawpers glands
(3) Lacrimal glands
(4) Harderian glands

63. Match the following from Group – I and II:

**Group – I**
(a) Supratrochlear (i) Radius-ulna Foramen
(b) Chemial crest (ii) Humerus
(c) Glenoid cavity (iii) Tibiofibula
(d) Sigmoid notch (iv) Pectoral girdle

**Group – II**

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

64. The stage when prospective areas of the surface in the developing embryo takes final position is called
(1) Cleavage (2) Blastula
(3) Gastrula (4) Neurula
65. विलक्षण की प्रक्रिया में सही क्रम है:

1. निषेचन → युगमनज → ब्लास्टुला →
   मोस्ला → विदलन → गैस्ट्रुला
2. विदलन → युगमनज → निषेचन → मोस्ला →
   ब्लास्टुला → गैस्ट्रुला
3. निषेचन → युगमनज → विदलन → मोस्ला →
   ब्लास्टुला → गैस्ट्रुला
4. विदलन → निषेचन → युगमनज →
   ब्लास्टुला → मोस्ला → गैस्ट्रुला

66. मेटडक के तेलपोल का कार्यात्मक वृक्क है:

1. आर्किनेफ्रोस (2) प्रोनेफ्रोस
2. मीसोनेफ्रोस (4) मेटानेफ्रोस

67. वह बाह्य भूषणीय झ़िल्ली जो सेने के तीसरे दिन सिसेका तथा एमिनोकैमे के मध्य मुर्गी के भ्रूण में
   विकसित होती है, कहलाती है:

1. कोरियोन (2) योक सैक
2. एलेंटोइस (4) गर्भ-नाल

68. निम्नलिखित में समूह- I व II को सही प्रकार से
   मिलाएँ:

<table>
<thead>
<tr>
<th>समूह- I</th>
<th>समूह- II</th>
</tr>
</thead>
<tbody>
<tr>
<td>(प्लेजेन्टा)</td>
<td>(जन्म)</td>
</tr>
<tr>
<td>(a) चक्रीय पाती</td>
<td>(i) मोसमक्षी</td>
</tr>
<tr>
<td>(b) क्षेत्रीय पाती</td>
<td>(ii) काइडोप्टरा</td>
</tr>
<tr>
<td>(c) बीजपत्रीय</td>
<td>(iii) सूअर अपाती</td>
</tr>
<tr>
<td>(d) विस्तिरत अपाती</td>
<td>(iv) रंगीन</td>
</tr>
</tbody>
</table>

सही उत्तर हैः

(1) (ii) (i) (iv) (iii)
(2) (ii) (iii) (i) (iv)
(3) (i) (iii) (iv) (ii)
(4) (iii) (ii) (i) (iv)

65. The correct sequence in the process of
devolution is:

1. Fertilization → zygote → blastula →
   morula → cleavage → gastrula
2. Cleavage → zygote → fertilization →
   morula → blastula → gastrula
3. Fertilization → zygote → cleavage →
   morula → blastula → gastrula
4. Cleavage → fertilization → zygote →
   blastula → morula → gastrula

66. The functional kidney of frog tadpole is:

(1) Archinephros (2) Pronephros
   (3) Mesonephros (4) Metanephros

67. The extraembryonic membrane which
develops between serosa and amnion on third day of incubation in chick
embryo is called:

(1) Chorion (2) Yolk sac
   (3) Allantois (4) Umbilical chord

68. Match the following from Group I to II
   correctly:

<table>
<thead>
<tr>
<th>Group – I</th>
<th>Group – II</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Placenta)</td>
<td>(Animals)</td>
</tr>
<tr>
<td>(a) Discoidal</td>
<td>(i) Carnivores</td>
</tr>
<tr>
<td>(b) Zonary</td>
<td>(ii) Chiroptera</td>
</tr>
<tr>
<td>(c) Cotyledonry</td>
<td>(iii) Pig</td>
</tr>
<tr>
<td>(d) Diffuse</td>
<td>(iv) Deer</td>
</tr>
</tbody>
</table>

The correct answer is:

<table>
<thead>
<tr>
<th>(a)</th>
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<td>(4)</td>
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69. प्राइमेट्स के लॉगिक चक्र की पीपलिप्ड प्राचेत्या इसके द्वारा नियंत्रित होता है:
(1) केवल एस्ट्रोजेन
(2) केवल प्रोजेस्ट्रोजेन
(3) केवल ल्यूटीनाइजिंग हारमोन
(4) एस्ट्रोजेन एवं प्रोजेस्ट्रोजेन दोनों

70. पौधे के एक भाग का ऊपरी सतह पर अधिक वृद्धि के कारण मुड़ना कहलाता है
(1) भूमि-अनुवर्तन (2) प्रकाशानुवर्तन
(3) अध्योक्षक (4) अध्योवृद्धि-वर्तन

71. निम्नलिखित में से कौन सा पाया में "आक्सिन" का प्रभाव नहीं है?
(1) अंकुर-चौल में धुंधाव
(2) कैम्बियम की वृद्धि
(3) पाथीनोकामी का प्रेरण
(4) कैम्बियम वृद्धि पर उद्वेद

72. एक पात्र में जल के ऊपर चढ़ने के लिए सही (उपयुक्त) शब्द है
(1) वाणिज्यवर्तन
(2) जल का अवशोषण
(3) जल का आरोपण
(4) रस का आरोपण

73. विलवन का परासावरणी विभव सदा होता है
(1) शूद्र (2) राजात्मक
(3) धानात्मक (4) परिवर्तनशील

74. महद्यभित्तिसे उद्देश्य पादप, जिनमें CO₂ रात्रि के समय ग्रहण की जाती है तथा दिन के समय उपयोग करने के लिए मेलिक अस्त्र के संग्रहीत की जाती है, कहलाते हैं
(1) रात्रिपादप
(2) CAM पादप
(3) घटपादप
(4) इनमें से कोई नहीं

69. Luteal phase of primate sexual cycle is controlled by
(1) Estrogen only
(2) Progesterone only
(3) Leutinizing hormone only
(4) Estrogen and progesterone both

70. Bending of a plant organ due to its more growth on the upper side is called
(1) Geotropism (2) Phototropism
(3) Epinasty (4) Hyponasty

71. Which of the following is not an effect of auxin in plants?
(1) Coleoptile curvature
(2) Cambial growth
(3) Induction of parthenocarpy
(4) Inhibition of cambial growth

72. Upward translocation of water in a plant is called correctly
(1) Transpiration
(2) Absorption of water
(3) Ascent of water
(4) Ascent of sap

73. Osmotic potential of a solution is always
(1) Zero (2) Negative
(3) Positive (4) Variable

74. The xerophytic succulent plants in which CO₂ is taken up during night and stored as malic acid to be used during day time, are called
(1) Nocturnal plants
(2) CAM plants
(3) Pitcher plants
(4) None of these
75. What is the main carboxylase enzyme in C₃ and C₄ plants?
   (1) RUBISCO in C₃ and PEP carboxylase in C₄
   (2) PEP carboxylase in C₃ and RUBISCO in C₄
   (3) RUBISCO in both
   (4) PEP carboxylase in both

76. Glyoxylate cycle in the plants is conversion of
   (1) Carbohydrate to fat
   (2) Fat to carbohydrate
   (3) Fatty acid to fat
   (4) Oxidation of carbohydrates

77. Gibberellins are named after
   (1) Gibberella, a fungus
   (2) Gibberlin, a scientist
   (3) Gibberlin, a plant
   (4) Gibberella, an insect

78. The average value of the lower and upper limit of a class is called
   (1) Mid point
   (2) Class boundary
   (3) Class frequency
   (4) Class interval

79. A circle in which sectors represent various quantities is called a
   (1) Histogram
   (2) Pie diagram
   (3) Bar diagram
   (4) Line graph

80. Calculate standard deviation of the height of 10 students given below:
   Height in cms: 160, 160, 161, 162, 163, 163, 164, 164, 164, 170
   The standard deviation is
   (1) 163
   (2) 2.72
   (3) 1630
   (4) 18
81. 350 व्यक्तियों की लंबाई नीचे दी गई है | माध्यलंबाई का परिकलन कीजिए।

<table>
<thead>
<tr>
<th>लंबाई (से.मी. में)</th>
<th>व्यक्तियों की संख्या</th>
</tr>
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<tbody>
<tr>
<td>159</td>
<td>1</td>
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<td>161</td>
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<td>163</td>
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<td>165</td>
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<td>167</td>
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<td>169</td>
<td>102</td>
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<tr>
<td>171</td>
<td>40</td>
</tr>
<tr>
<td>173</td>
<td>17</td>
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</tbody>
</table>

माध्य लंबाई हैः
(1) 167.89 से.मी.
(2) 167 से.मी.
(3) 131 से.मी.
(4) उपरोक्त में से कोई नहीं

82. नियंत्रित परिस्थितियों में सावित, अवशोषित या पारागित प्रकाश ऊज्ज्वल का माप कहलाता है
(1) फोटोमीट्री
(2) माइक्रोस्कोपी
(3) इलेक्ट्रोफोरेसिस
(4) क्रोमेटोग्राफी

83. एक अचल (स्थिर) प्रवास से बंधुता के आधार पर एक मिश्रण के घटकों को अलग करने की तकनीक कहलाती है
(1) अपकेन्द्रीकरण
(2) अनुमापन
(3) नियंत्रण
(4) क्रोमेटोग्राफी

84. निम्नलिखित में कौन सा इलेक्ट्रोफोरेसिस तंत्र का घटक नहीं है ?
(1) सहायक माध्यमयुक्त एक चैम्बर (कक्ष)
(2) एक एनोड और एक कैथोड
(3) प्रकाश घोष
(4) एक विद्युत आपूर्ति

81. Height of 350 persons is given below:
Calculate the mean height.

<table>
<thead>
<tr>
<th>Height in cms.</th>
<th>No. of persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>159</td>
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<td>161</td>
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</tbody>
</table>

The mean height is
(1) 167.89 cm
(2) 167 cm
(3) 131 cm
(4) None of these

82. The measurement of light energy emitted, absorbed or transmitted under controlled conditions is called
(1) Photometry
(2) Microscopy
(3) Electrophoresis
(4) Chromatography

83. A technique used to separate components in a mixture, depending upon their affinity to a stationary phase is called
(1) Centrifugation
(2) Titration
(3) Filtration
(4) Chromatography

84. Which of the following is not a component of electrophoresis system?
(1) A chamber containing a support medium
(2) An anode and a cathode
(3) Light source
(4) A power supply
85. जीवित कोशिकाओं को उनकी प्राकृतिक अवस्था में, पहले से उन्हें मारे, स्थिरित किए एवं अंतिमित किए बिना, परीक्षण करने के लिए प्रयुक्त तकनीक हैः
(1) प्रकाश सूक्ष्मदर्शकी (दृश्य क्षेत्र सूक्ष्मदर्शकी)
(2) ट्रांसमिशन इलेक्ट्रॉन सूक्ष्मदर्शकी
(3) स्कैनिंग इलेक्ट्रॉन सूक्ष्मदर्शकी
(4) फ़ेज़ कॉन्ट्रास्ट सूक्ष्मदर्शकी

86. भारतीय बिसन (जंगली भैंसा) या गौर निम्नलिखित में से किस स्थान पर भी पाया जाता हैः
(1) पोलैश्ड  (2) व्यायाम
(3) प्लांडा  (4) ब्राजील

87. निम्नलिखित में से कोन सा राष्ट्रीय उद्यान "माउंट गोरिल्ला" को संरक्षित करने के लिए बनाया गया हैः
(1) माउंट सीमियान नेशनल पार्क, इथोपिया
(2) बोटेबोक नेशनल पार्क, दक्षिण अफ्रीका
(3) काजीसंगा नेशनल पार्क, भारत
(4) विरुंगा नेशनल पार्क, कंगो

88. भारत में रेगिस्तान राष्ट्रीय उद्यान (डेजर्ट नेशनल पार्क) निम्न में से किस स्थान पर हैः
(1) जैसलमेर एवं बाढ़मेर  (2) चुहू
(3) कच्चा का रान  (4) भरतपुर

89. निम्नलिखित में से कोन सा एक बायोव्हीमर रिजर्व का भाग नहीं हैः
(1) कोर्सेशन  (2) मैनप्यूचरेशन क्षेत्र
(3) बफ़र क्षेत्र  (4) मनोरंजन क्षेत्र

85. The technique used for examining living cells in their natural state, without previously being killed, fixed and stained is
(1) Light microscopy (Bright field microscopy)
(2) Transmission electron microscopy
(3) Scanning electron microscopy
(4) Phase contrast microscopy

86. Indian Bison or Gour is also found in natural habitat in which of the following places?
(1) Poland  (2) Myanmar
(3) Florida  (4) Brazil

87. Which of the following National Park is created to protect "Mountain Gorilla"?
(1) Mount Simien National Park, Ethiopia
(2) Bontebok National Park, South Africa
(3) Kaziranga National Park, India
(4) Virunga National Park, Congo

88. Desert National Park in India is located at which of the following place?
(1) Jaisalmer and Barmer
(2) Churu
(3) Raan of Kutchch
(4) Bharatpur

89. Which of the following is not a part of a biosphere reserve?
(1) Core zone
(2) Manipulation zone
(3) Buffer zone
(4) Entertainment zone
90. Which of the following is not true for courtship behaviour of animals?

(1) It is not species specific.
(2) Male and female of the same species must synchronize their courtship sequence.
(3) It is instinctive.
(4) It is genetically controlled.

91. The special neurosensory mechanism that releases the behaviour in response to sign stimulus is called

(1) Innate releasing mechanism
(2) Action specific energy
(3) Instinct
(4) Memory

92. Which of the following is not a sign of positive mental health?

(1) Adoptability
(2) Enthusiasm
(3) Lack of own philosophy and values of life
(4) Emotional adjustment

93. Which of the following adjustment problems may be faced by intellectually gifted learners (students)?

(1) Superiority over available peers.
(2) Lack of teacher’s recognition of superiority.
(3) Lack of parental recognition of superiority.
(4) All options are correct.
94. Two major characteristics of cognitive functioning according to Piaget are as follows:
   (1) Organization and Adaptation.
   (2) Information processing and balance.
   (3) Schema and Patterns.
   (4) No option is correct.

95. Which of the following is not a function of educational psychology?
   (1) To know the learner.
   (2) To select and organise the subject-matter.
   (3) To suggest techniques of learning.
   (4) To understand persons with abnormal psychology.

96. The key factors involved in an educational process includes
   (1) Learner and Teacher
   (2) Learning experiences, learning process and learning environment
   (3) Both (1) and (2)
   (4) None of these

97. Which of the following factor does not affect physical development?
   (1) Presence or absence of physical defect.
   (2) Positive and Negative reinforcement.
   (3) Nutrition received by the child after birth.
   (4) Normal or abnormal delivery.

98. The development is related to the
   (1) Growth
   (2) Maturity
   (3) Age factor
   (4) All options are correct.
99. According to Piaget, which one is not a level of moral development?

(1) Moral Authority
(2) Moral Realism
(3) Moral Equality
(4) Moral Relativism

100. Which one of following statement is not correct?

(1) Unlike I.Q., emotional intelligence may be the best predictor of success in life.
(2) Emotional Intelligence is not a unitary ability (Related to but independent of standard intelligence).
(3) Mayer scale (MEIS) is a tool for measuring emotional intelligence.
(4) Emotions are always accompanied with physiological changes.

101. Which of the following is not an example of learning theory?

(1) Classical conditioning
(2) Trial and Error
(3) Operant conditioning
(4) Drive Reduction Theory

102. Which of the following is the characteristics of learning?

(1) Learning is change in behaviour.
(2) Learning is a continuous life long process.
(3) Learning is purposive and goal-directed.
(4) All options are correct.
103. Which of the following is secondary law of learning according to Thorndike?

(1) Law of Exercise
(2) Law of Mental Set
(3) Law of Readiness
(4) All options are correct.

104. Characteristics of social development in adolescence includes

(1) Formation of groups
(2) Development of friendship
(3) Feeling of Revolt
(4) All the above

105. Which of following statement is not true?

(1) Educational psychology does not develop comprehensive vision about education.
(2) Educational psychology teaches to care about individual differences.
(3) Educational psychology introduces measurement methods to teachers.
(4) Educational psychology informs about best teaching methods.

106. Which one of the following is step of system approach?

(1) System Analysis
(2) System Design and Development
(3) System operation and evaluation
(4) All options are correct.
107. निम्न में से कौन सा कथन सत्य नहीं है?
(1) कोमल उपगम का समबेद निवेश, निर्गत तथा प्रक्रिया तीनों से होता है।
(2) श्रव्य-दृष्टि सामान्यतः कठोर उपगम के उदाहरण है।
(3) श्रव्य-दृष्टि सामान्यतः अधिक अतरण की संभावना कम कर देते हैं।
(4) कोई विकल्प सही नहीं है।

108. कम्प्यूटर सह अनुदेशन के लिए किन विशेषज्ञों की आवश्यकता होती है?
(1) अभिक्रियक लेखक (प्रोग्रामर)
(2) कम्प्यूटर अभिव्यक्ता
(3) प्रणाली प्रबंधक
(4) सभी विकल्प सही हैं।

109. निम्न में से कौन सा कथन सत्य है?
(1) हरबर्ट का शिक्षण प्रतिमान विश्लेषन स्तर का है।
(2) मॉरिसन का शिक्षण प्रतिमान बोध स्तर का है।
(3) हंट का शिक्षण प्रतिमान स्मृति स्तर का है।
(4) उपरोक्त सभी

110. निम्न में से कौन सी शिक्षण की उच्च प्रविधि नहीं है?
(1) प्रश्नात्मक
(2) वाद-विवाद
(3) सम्बन्ध
(4) कार्यालय

111. दूरदर्शन का प्रयोग निम्नलिखित रूपों में किया जा सकता है: 
(1) निर्देशात्मक दूरदर्शन
(2) बदल परिपथ दूरदर्शन
(3) उपग्रह निर्देशन दूरदर्शन प्रयोग
(4) सभी विकल्प सही हैं।

107. Which of the following statement is not correct?
(1) Software approach is related to input, process and output.
(2) Audio-visual aids are example of Hardware approach.
(3) Audio-visual aids decreases the possibility of transfer of learning.
(4) No option is correct.

108. Which experts are required for implementing computer aided instruction?
(1) Programmer
(2) Computer Engineer
(3) System Operator
(4) All options are correct.

109. Which of the following statement is correct?
(1) Herbert model of teaching is of reflective level.
(2) Morrison model of teaching is of understanding level.
(3) Hunt model of teaching is of memory level.
(4) All the above.

110. Which one of the following is not a technique for higher teaching?
(1) Questioning  (2) Discussion
(3) Conference  (4) Workshop

111. Television can be used in following forms:
(1) Instructional Television
(2) Closed Circuit Television
(3) Satellite Instruction TV Experiment
(4) All options are correct.
112. Educational TV in India started in the year
(1) October, 1961
(2) November, 1962
(3) August, 1984
(4) None of the above

113. Which of the following statement is not correct?
(1) Learner’s physical health affects the learning process.
(2) Achievement motivation has no any role in learning.
(3) Nature of content affects the learning process.
(4) None of the above.

114. Cognitive development according to Bruner includes
(1) Enactive stage
(2) Process of reversibility
(3) Intuitive stage
(4) Pre-conceptual stage

115. According to McDougall theory, following pair of instinct and emotions is correct
(1) Flight – Lust
(2) Curiosity – Love
(3) Laughter – Amusement
(4) Construction – Appetite

116. Which one of the following is related to Lewin’s field theory?
(1) Life space
(2) Vectors and valences
(3) Topology
(4) All options are correct.
117. निम्न में से कौन सा अच्छे मानसिक स्वास्थ्य का लक्षण नहीं है?
(1) संतुलित, एकीकृत एवं सामाजिकपूर्ण विकास
(2) नियमित दिनचर्या
(3) वार्ताविकता की अस्वीकृति
(4) आत्म-पूर्वांकन की कमता

118. अनुकूलन की प्रक्रिया में सम्मिलित होता है?
(1) आत्मसहभागिता एवं समाविश्वेकरण
(2) संज्ञानात्मक कार्यविधि
(3) संगठन
(4) कोई विकल्प सही नहीं है।

119. संबंध की विशेषता है?
(1) संबंधों की व्यापकता
(2) विचार प्रक्रिया का कार्य न करणा
(3) संबंधों की अस्थिरता
(4) सभी विकल्प सही हैं।

120. निश्चित तथा पूर्वकथित प्रतिरूप का सिद्धान्त सम्बन्धित है?
(1) अभिप्रेरणा
(2) अधिगम
(3) वृद्धि एवं विकास
(4) सभी विकल्प सही हैं।

121. शिक्षा मनोविज्ञान का महत्व है?
(1) विकासात्मक विशेषज्ञताओं को समझने में
(2) अधिगम की प्रकृति को समझने में
(3) व्यक्तित्व भिन्नताओं को समझने में
(4) सभी विकल्प सही हैं।

117. Which of the following is not a characteristics of good mental health?
(1) Balanced, Integrative and Harmonious Development
(2) Regular life
(3) Rejection of reality
(4) Capacity of self evaluation

118. The process of adaptation consists of
(1) Assimilation and accommodation
(2) Cognitive functioning
(3) Organisation
(4) No option is correct.

119. Characteristic of emotion is
(1) Universality of emotions
(2) Not functioning of thinking process
(3) Instability of emotions
(4) All options are correct.

120. The principle of definite and predictable pattern is related to
(1) Motivation
(2) Learning
(3) Growth and Development
(4) All options are correct.

121. Educational psychology is important
(1) to understand developmental characteristics
(2) to understand the nature of learning
(3) to understand individual differences
(4) All options are correct.
122. Which of the following does not have a cell wall?
(1) Archaebacteria
(2) Cyanobacteria
(3) Mycoplasma
(4) Nostoc

123. Which of the following stages bears sex organs in mosses?
(1) Protonema stage
(2) Leafy stage
(3) Both the stage
(4) None of these

124. Bracket fungi is included in
(1) Deuteromycetes
(2) Basidiomycetes
(3) Phycomycetes
(4) Ascomycetes

125. Which of the following algae stores food as floridean starch?
(1) Blue green algae
(2) Brown algae
(3) Red algae
(4) Green algae

126. Which of the following is not correctly matched?
(1) Equisetum — Monocot
(2) Salaginella — Pteridophyta
(3) Funaria — Moss
(4) Laminaria — Brown algae

127. In which of the following, male and female gametophytes do not have an independent free living existence?
(1) Mosses
(2) Liverworts
(3) Pteridophytes
(4) Gymnosperms
128. रक्त याहिनियाँ में निम्नलिखित में से कोन सी पेशियाँ पाई जाती हैं?
(1) चिकनी पेशियाँ
(2) कंकाल पेशियाँ
(3) हदय पेशियाँ
(4) चिकनी एवं रेखित पेशियाँ

129. निम्नलिखित में से कोन सा सुमेलित है?
(1) गाजर — अपस्थानिक जड़ें
(2) आलू — पारोसिसा जड़ें
(3) बरगद — प्रोप जड़ें
(4) शकरकंद — मूसला जड़ें

130. निम्नलिखित में से कोन से पादप उत्तक में
लिपीपाइड (लिपीनयुक) कोशिका मिलती होती है?
(1) परेन्काइमा (मुदूकत)
(2) कोलेन्काइमा (रूपलक्षण उत्तक)
(3) स्केलेन्काइमा (डुबौकत)
(4) मीसोफिल (पुष्पमध्योत्तक)

131. निम्नलिखित में से किसमें प्लाइम एवं जाइलम
cे की भूमिका (ए.ए.) उपस्थित होती है?
(1) एकबीजपत्री पत्ते में
(2) पीरिडोफाइटा में
(3) एकबीजपत्री तने में
(4) द्विबीजपत्री तने में

132. निम्नलिखित में से किस पादप में सममित पुष्प
पाये जाते है?
(1) सरसों
(2) मटर
(3) कैसिया
(4) कैना

133. एक पुष्प का एपोकार्पस अंडाशय में होता है
(1) एक अंडप
(2) बहुत से अंडप मगर स्वतंत्र
(3) बहुत से अंडप मगर जुड़े हुए।
(4) दो अंडप

128. Which of the following types of muscles are found in blood vessels?
(1) Smooth muscles
(2) Skeletal muscles
(3) Cardiac muscles
(4) Smooth & striated muscles

129. Which of the following is correctly matched?
(1) Carrot — Adventitious roots
(2) Potato — Stilt root
(3) Banyan tree — Prop roots
(4) Sweet potato — Tap root

130. Which of the following tissues of plants has lignified cell walls?
(1) Parenchyma
(2) Collenchyma
(3) Sclerenchyma
(4) Mesophyll

131. In which of the following cambium is present between phloem and xylem?
(1) Monocot leaf
(2) Pteridophyta
(3) Monocot stem
(4) Dicot stem

132. Symmetric flowers are found in which of the following plants?
(1) Mustard
(2) Pea
(3) Cassia
(4) Canna

133. Apocarpous ovary of a flower is with
(1) Single carpel
(2) Many carpels but free
(3) Many carpels but fused
(4) Two carpels
134. स्कूटॅनम है
(1) पूष्का का एक भाग
(2) एन्टॉर्पस्म का एक भाग
(3) द्वितीयपत्रियों का बीजपत्र
(4) धार का बीजपत्र

135. लाइसोसोम में पाए जाने वाले किस्मियाँ हैं
(1) पराक्सीमेज
(2) हाइड्रोलाजेज
(3) केरेलेजेज
(4) डिहाइड्रोलाजेजेज

136. जीवाणु का एकोप्सीौषोमाल डी.एन.ए.
कहलाता है
(1) मांसोसोम
(2) प्लाज्माइड
(3) बैक्टीरियोफाज
(4) रासबीयोसम

137. "सभी कोशिकाओं का निर्माण कोशिका विभाजन
d्वा पूर्ववर्ती कोशिकाओं से होता है।" यह किसने
खोजा था?
(1) रूडोल्फ वर्डन
(2) रॉबर्ट ब्राउन
(3) टी.श्वान
(4) एम. एलाइडन

138. निम्नलिखित में से कौन सा पादप कोशिका में
अनुपालित मिलता है?
(1) कोशिका भिंति
(2) त्वक (प्लास्टिन)
(3) सेटिनोल (तारक क्षेत्र)
(4) बड़ी के-ंट्रिय रिक्तियाँ

139. विकल्प अन्तर्गतीय जालिका इनके संस्करण में
शामिल होती है?
(1) प्रोटीन
(2) वसा
(3) कार्बोहाइड्रेट
(4) न्यूक्लिक अम्ल

140. एक कोशिका में विभाजन के बाद भी
माइक्रोनिजिया की संख्या समान रहती है क्योंकि
(1) इन दीर्घ से माइक्रोनिजिया का संस्करण
(2) माइक्रोनिजिया का कई टुकड़े में टूट जाना।
(3) विभंजन के कारण संख्या समान बनी रहती है।
(4) विभाजन द्वारा माइक्रोनिजिया का भी दो
भागों में विभाजित हो जाता है।

134. Scutellum is
(1) a part of flower
(2) a part of endosperm
(3) cotyledon of dicots
(4) cotyledon of grasses

135. Enzymes present in lysosomes are
(1) Peroxidases
(2) Hydrolases
(3) Catalases
(4) Dehydrogenases

136. Extra chromosomal DNA of bacteria is
called
(1) Mesosome
(2) Plasmid
(3) Bacteriophage
(4) Ribosomes

137. Who discovered that all cells arise from
pre-existing cells by cell division?
(1) Rudolf Virchow
(2) Robert Brown
(3) T. Schwann
(4) M. Schleiden

138. Which of the following is absent in
plant cells?
(1) Cell wall
(2) Plastids
(3) Centrioles
(4) Large central vacuole

139. Smooth Endoplasmic reticulum is
involved in the synthesis of
(1) Proteins
(2) Lipids
(3) Carbohydrates
(4) Nucleic acids

140. Total number of mitochondria in a cell
remains constant after division because
(1) De-novo synthesis of new
mitochondria
(2) Fragmentation of Mitochondria
(3) Number is maintained due to
fertilization
(4) Mitochondria also divides by
fission into two parts
141. Terminal centromere is found in which of the following types of chromosomes?
(1) Acrocentric (2) Metacentric (3) Sub-metacentric (4) Telocentric

142. Which one of the following is not a polymeric carbohydrate?
(1) Fructose (2) Inulin (3) Chitin (4) Cellulose

143. Which of the following pairs are not correctly matched?
A. Homothallic – Bisexual plant
B. Hermaphrodite – Earthworm
C. Heterothallic – Unisexual plant
D. Pistillate – Male flower
E. Menarche – End or cessation of menstrual cycle in Humans

The correct answer is:
(1) A. B. C (2) B. D. E (3) C. D. E (4) A. D. E

144. Which of the following statements is false?
(1) Cells at the end of prophase do not show golgi bodies and ER.
(2) Small disc shaped structures at the surface of the centromeres are called kinetochores.
(3) Metaphase plate is formed at the equator of the spindle.
(4) Chromosome splitting and separation of chromatids occurs at telophase.

145. Which of the following pairs is not correctly matched?
(1) Ovary – Progesterone (2) Testes – Androgens (3) Islets of Langerhans – Glucagon (4) Atrial valve of heart – Secretin
146. Which of the following statements is not correct?

(1) Parathyroid hormone increases blood calcium levels.
(2) Corticoids involved in carbohydrate metabolism are known as mineralocortcoids.
(3) Cortisol produces anti-inflammatory reactions.
(4) Catecholamines are also called as emergency hormones.

147. Which of the following is not present in the bile juice?

(1) Digestive enzymes
(2) Cholesterol
(3) Phospholipids
(4) Bile salts

148. Volume of air inspired or expired during a normal respiration is called

(1) Total lung capacity
(2) Tidal volume
(3) Inspiratory reserve volume
(4) Vital capacity

149. The first heart sound “lub” heard during cardiac cycle through stethoscope is associated with

(1) closure of bicuspid valve only
(2) closure of tricuspid valve only
(3) closure of bicuspid and tricuspid both the valves
(4) closure of semi lunar valves

150. The ship on which Charles Darwin travelled round the world is called

(1) H.M.S. Beagle
(2) H.L. Hunley
(3) The Mayflower
(4) Titanic