अधिव्याख्याता, वनस्पतीशास्त्र चाळणी परीक्षा - 2011

A

2011 Code : RPM

109

परीक्षा दि: 11/12/2011 प्रश्नपुस्तिका क्रमांक
BOOKLET No.

प्रश्नपुस्तिका

चाळणी परीक्षा
वनस्पतीशास्त्र विषयक ज्ञान

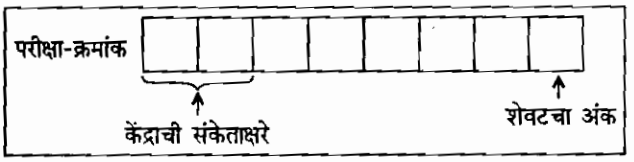
वेळ : $1\frac{1}{2}$ (दीड) तास

एकूण प्रश्न : 150
एकूण गुण : 150

सूचना

(1) सदर प्रश्नपुस्तिकेत **150** अनिवार्य प्रश्न आहेत. उमेदवारांनी प्रश्नांची उत्तरे लिहिण्यास सुरुवात करण्यापूर्वी या प्रश्नपुस्तिकेत सर्व प्रश्न आहेत किंवा नाहीत याची खात्री करून घ्यावी. असा तसेच अन्य काही दोष आढळल्यास ही प्रश्नपुस्तिका समवेक्षकांकडून लगेच बदलून घ्यावी.

(2) आपला परीक्षा-क्रमांक ह्या चौकोनांत **न विसरता बॉलपेनने** लिहावा.



(3) वर छापलेला प्रश्नपुस्तिका क्रमांक तुमच्या उत्तरपत्रिकेवर विशिष्ट जागी उत्तरपत्रिकेवरील सूचनेप्रमाणे **न विसरता नमूद करावा.**

(4) या प्रश्नपुस्तिकेतील प्रत्येक प्रश्नाला 4 पर्यायी उत्तरे सुचविली असून त्यांना 1, 2, 3 आणि 4 असे क्रमांक दिलेले आहेत. त्या चार उत्तरांपैकी सर्वात योग्य उत्तराचा क्रमांक उत्तरपत्रिकेवरील सूचनेप्रमाणे तुमच्या उत्तरपत्रिकेवर नमूद करावा. अशा प्रकारे उत्तरपत्रिकेवर उत्तरक्रमांक नमूद करताना तो संबंधित प्रश्नक्रमांकासमोर छायांकित करून दर्शविला जाईल याची काळजी घ्यावी. **ह्याकरिता फक्त काळ्या शाईचे बॉलपेन वापरावे, पेन्सिल वा शाईचे पेन वापरू नये.**

(5) सर्व प्रश्नांना समान गुण आहेत. यास्तव सर्व प्रश्नांची उत्तरे द्यावीत. घाईमुळे चुका होणार नाहीत याची दक्षता घेऊनच शक्य तितक्या वेगाने प्रश्न सोडवावेत. क्रमाने प्रश्न सोडविणे श्रेयस्कर आहे पण **एखादा प्रश्न कठीण वाटल्यास त्यावर वेळ न घालविता पुढील प्रश्नाकडे वळावे.** अशा प्रकारे शेवटच्या प्रश्नापर्यंत पोहोचल्यानंतर वेळ शिल्लक राहिल्यास कठीण म्हणून वगळलेल्या प्रश्नांकडे परतणे सोईस्कर ठरेल.

(6) उत्तरपत्रिकेत एकदा नमूद केलेले उत्तर खोडता येणार नाही. नमूद केलेले उत्तर खोडून नव्याने उत्तर दिल्यास ते तपासले जाणार नाही.

(7) **प्रस्तुत परीक्षेच्या उत्तरपत्रिकांचे मूल्यांकन करताना उमेदवाराच्या उत्तरपत्रिकेतील योग्य उत्तरांनाच गुण दिले जातील. तसेच "उमेदवाराने वस्तुनिष्ठ बहुपर्यायी स्वरूपाच्या प्रश्नांची अचूक उत्तरेच उत्तरपत्रिकेत नमूद करावीत. अन्यथा त्यांच्या उत्तरपत्रिकेत सोडविलेल्या प्रत्येक चार चुकीच्या उत्तरांसाठी एका प्रश्नाचे गुण वजा करण्यात येतील".**

पर्यवेक्षकांच्या सूचनेविना हे सील उघडू नये

ताकीद

ह्या प्रश्नपत्रिकेसाठी आयोगाने विहित केलेली वेळ संपेपर्यंत ही प्रश्नपुस्तिका आयोगाची मालमत्ता असून ती परीक्षाकक्षात उमेदवाराला परीक्षेसाठी वापरण्यास देण्यात येत आहे. ही वेळ संपेपर्यंत सदर प्रश्नपुस्तिकेची प्रत/प्रती, किंवा सदर प्रश्नपुस्तिकेतील काही आशय कोणत्याही स्वरूपात प्रत्यक्ष वा अप्रत्यक्षपणे कोणत्याही व्यक्तीस पुरविणे, तसेच प्रसिद्ध करणे हा गुन्हा असून अशी कृती करणाऱ्या व्यक्तीवर शासनाने जारी केलेल्या "परीक्षांमध्ये होणाऱ्या गैरप्रकारांना प्रतिबंध करण्याबाबतचा अधिनियम-82" यातील तरतुदीनुसार तसेच प्रचलित कायद्याच्या तरतुदीनुसार कारवाई करण्यात येईल व दोषी व्यक्ती कमाल एक वर्षाच्या कारावासाच्या आणि/किंवा रुपये एक हजार रकमेच्या दंडाच्या शिक्षेस पात्र होईल.

तसेच ह्या प्रश्नपत्रिकेसाठी विहित केलेली वेळ संपण्याआधी ही प्रश्नपुस्तिका अनधिकृतपणे बाळगणे हा सुद्धा गुन्हा असून तसे करणारी व्यक्ती आयोगाच्या कर्मचारीवृंदापैकी, तसेच परीक्षेच्या पर्यवेक्षकीयवृंदापैकी असली तरीही अशा व्यक्तीविरुद्ध उक्त अधिनियमानुसार कारवाई करण्यात येईल व दोषी व्यक्ती शिक्षेस पात्र होईल.

पुढील सूचना प्रश्नपुस्तिकेच्या अंतिम पृष्ठावर पहा

कच्च्या कामासाठी जागा / SPACE FOR ROUGH WORK

1. Yellow-green algae belong to the division

(1) Cyanophyta (2) Chlorophyta

(3) Xanthophyta (4) Chrysophyta

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2. Which of the following algae possesses a plant body that bears a superficial resemblance to the roots, leaves and stems of higher plants ?

(1) Vaucheria (2) Ectocarpus

(3) Oedogonium (4) Sargassum

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3. Physiological anisogamy involves union of two of the following :

(1) Similar gametes which are motile

(2) Similar gametes which are non-motile

(3) One active motile gamete and one passive non-motile gamete which are similar

(4) Dissimilar gametes which are motile

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4. The life cycle exhibited by Batrachospermum is

(1) Diplohaplontic type (2) Haplobiontic type

(3) Diplobiontic type (4) Diplontic type

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5. The Chantransia stage in the life is a characteristic feature of

(1) Batrachospermum (2) Sargassum

(3) Oedogonium (4) Coleochaete

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6. Which of the following algae is found in the body of hydra and beneath the scales of fishes ?

(1) Volvox (2) Oedogonium

(3) Chlamydomonas (4) Chlorella

SPACE FOR ROUGH WORK

7. Nannandria of Oedogonium are

(1) Monoecious (2) Dioecious

(3) Both monoecious and dioecious (4) None of the above

8. The reserve food material in Xanthophyceae is

(1) Lamminarin and Mannitol (2) Fucoxanthin

(3) Leucosin (4) Floridean Starch

9. The algae which are an important source of iodine, mineral salts, bromine and potash are

(1) Diatoms (2) Kelps

(3) Blue-green algae (4) Red algae

10. Agar-agar is obtained from

(1) Brown algae (2) Blue-green algae

(3) Red algae (4) Green algae

11. Sexual reproduction takes place by gametangial copulation in

(1) Yeast (2) Lichens (3) Rhizopus (4) Penicillium

12. A derivative of ergot known by the name lysergic acid, used in human medicine is obtained from

(1) *Mucor racemosus* (2) *Aspergillus flavus*

(3) *Claviceps purpurea* (4) *Penicillium javanicum*

13. Which of the following classes of fungi form croziers during sexual reproduction ?

(1) Ascomycetes (2) Phycomycetes

(3) Basidiomycetes (4) Deuteromycetes

SPACE FOR ROUGH WORK

14. In the life history of *Puccinia*, the spores which infect *Berberis* leaves are

(1) Basidiospores (2) Uredospores

(3) Aeciospores (4) Telentospores

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15. The yeast in which both haploid and diploid alternating generations propagate by budding is

(1) *Saccharomyces cerevisiae* (2) *Saccharomyces ludwigii*

(3) *Schizosaccharomyces octosporus* (4) None of the above

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16. *Colletotrichum* belongs to form order

(1) Melanconiales (2) Sphaeropsidales

(3) Moniliales (4) Mycelia sterilia

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17. Deuteromycetes fungi produce conidia in

(1) Sporodochium (2) Pycnidium

(3) Acervulus (4) All the above

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18. Lichens are classified on the basis of

(1) Algal Partner (2) Fungal Partner

(3) Both Algal and Fungal Partner (4) External Structure

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19. Which of the following edible mushrooms belongs to Basidiomycota ?

(1) *Morchella* (2) *Terfezia* (3) *Verpa* (4) *Pisolithus*

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20. *Pleurotus* is commonly known as

(1) Button mushroom (2) Oyster mushroom

(3) Paddy Straw mushroom (4) Jelly Fungi

SPACE FOR ROUGH WORK

21. Liverworts are usually

(1) Green and thalloidal (2) Colourless and thalloidal

(3) Red and thalloidal (4) Blue and thalloidal

22. Cyanobacteria are found in the thallus of

(1) *Riccia* (2) *Anthoceros* (3) *Funaria* (4) *Pellia*

23. The teeth of the peristome of *Funaria* are

(1) sensitive (2) hydroscopic

(3) hygroscopic (4) sensitive and hydrophobic

24. Alternation of morphologically different generations is called

(1) Homologous (2) Heterologous

(3) Both of the above (4) None of the above

25. Gametophytic generation is dominant in

(1) Gymnosperms (2) Angiosperms

(3) Bryophyta (4) Pteridophytes

26. The gametophyte is saprophytic subterranean in

(1) *Osmunda* (2) *Psilotum* (3) *Nephrolepis* (4) *Rhynia*

27. The diameter of megaspore of *Isoetes* is

(1) 1·0 mm to 1·5 mm (2) 1·6 mm to 2·0 mm

(3) more than 2·0 mm (4) upto 0·9 mm

28. The name Calamites is due to Suckow who used it for

(1) pith cast (2) tree (3) sporangium (4) rhizome

SPACE FOR ROUGH WORK

29. The leaf surface of *Azolla* is papillate to prevent

(1) rotting (2) wetting

(3) floating (4) All of the above

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30. The most important genera *Rhynia* and *Horneophyton* are from the

(1) Mesozoic in Scotland (2) Paleozoic in Scotland

(3) Middle Devonian in Scotland (4) Upper Silurian in Germany

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31. The bacteria which do ***not*** possess flagellae are termed

(1) monotrichous (2) amphitrichous

(3) peritrichous (4) atrichous

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32. The bacterial chromosome has a molecular weight of about

(1) $0{\cdot}02 \times 10^9$ (2) $0{\cdot}2 \times 10^9$ (3) $2{\cdot}0 \times 10^9$ (4) 20×10^9

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33. Plastids are present is

(1) *E. coli* (2) TMV (3) lichens (4) bacteriophage

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34. Conjugation in *E. coli* was demonstrated by

(1) Tatum and Lederberg (2) Singh

(3) Pande (4) Jain

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35. The Irish potato famine was caused by

(1) *Alternaria solani* (2) *Phytophthora infestans*

(3) *Puccinia graminis* (4) *Albugo candida*

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36. *Corynebacterium rathayi* causes

(1) yellow slime disease (2) yellowing rot

(3) yellow rust (4) yellow mosaic

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37. *Marmor virgatum* causes

(1) streak mosaic (2) soil borne mosaic

(3) foot rot (4) powdery mildew

38. Root knot disease is caused by

(1) *Anguina tritici* (2) *Marmor tritici*

(3) *Helminthosporium sativum* (4) *Meloidogyne arenaria*

39. The point at which the inoculum establishes itself inducing infection is called

(1) infection court (2) infection area

(3) infection spot (4) infection band

40. Loose smut of wheat is caused by

(1) *Puccinia graminis* var. *tritici* (2) *Ustilago nuda* var. *tritici*

(3) *Puccinia striformis* (4) *Puccinia recondita*

41. *Sequoia sempervirens* attain a height upto

(1) less than 100 meters (2) 100 meters

(3) more than 100 meters (4) None of the above

42. Sago is obtained from the stem of

(1) *Agathis australis* (2) *Dioon edule*

(3) *Cryptomeria japonica* (4) *Taxodium distichum*

43. The *aristala* that still occasionally produces cones in Inyo National Forest of California, USA is

(1) 300 years old (2) 5000 years old

(3) 4600 years old (4) 3000 years old

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44. Ephedrine obtained from *Ephedra* is effective in

(1) cold (2) asthma (3) hepatitis (4) malaria

45. The development of female gametophyte in *Gnetum* is

(1) bisporic (2) tetrasporic

(3) trisporic (4) monosporic

46. *Tragopogon porrifolius* is known as

(1) vegetable insect (2) vegetable oyster

(3) vegetable parasite (4) vegetable fish

47. Gynobasic style is observed in

(1) Malvaceae (2) Liliaceae (3) Lamiaceae (4) Poaceae

48. *Ranunculus aquatilis* shows

(1) anemophily (2) entomophily

(3) heterophily (4) homophily

49. Wax utilized for manufacturing candles, boot polishes is obtained from

(1) *Laportea crenulata* (2) *Copernicia cerifera*

(3) *Montia* phya (4) *Boehmeria nivea*

50. Bisexual flowers never opening but usually remaining underground and closed is called

(1) Homogamy (2) Allogamy (3) Cleistogamy (4) Apogamy

51. Anomocytic type of stomata are seen in

(1) Malvaceae (2) Papaveraceae

(3) Capparidaceae (4) All of them

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52. The activity of normal cambium is abnormal in

(1) *Calotropis* (2) *Bignonia* (3) *Strychnos* (4) *Epilobium*

53. Transfer of pollen grains from the anther to stigma of a different plant is

(1) Autogamy (2) Xenogamy (3) Allogamy (4) Geitonogamy

54. Helobial endosperm is restricted to

(1) Dicotyledons (2) Monocotyledons

(3) Pteridophyta (4) Bryophyta

55. Plants containing poisonous compounds are called

(1) Urioids (2) Phytol (3) Cyanophoric (4) Semantides

56. The system which does ***not*** throw light on the origin of angiosperms was proposed by

(1) Charles Bessey (2) Bentham and Hooker

(3) Engler and Prantl (4) John Hutchinson

57. The lowest chromosome number is shown by

(1) *Poa littorosa* (2) *Allium cepa*

(3) *Haplopappus gracilis* (4) *Quercus indica*

58. Gymnosperms are separated and placed rightly before angiosperms by

(1) Bentham and Hooker (2) Engler and Prantl

(3) Anderson (4) Eichler

59. The calcium oxalate crystals are seen in some members of

(1) Solanaceae (2) Onagraceae (3) Liliaceae (4) Poaceae

SPACE FOR ROUGH WORK

60. The oldest angiosperms are believed to be

(1) *Archaefructus* (2) *Achyranthus*

(3) *Asclepias* (4) *Amanita*

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61. Which period is often referred as Coal Age ?

(1) Cretaceous (2) Permian (3) Carboniferous (4) Silurian

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62. Diatomaceous earth is formed from the siliceous cell walls of

(1) Fungi (2) Algae (3) Bryophytes (4) Starfishes

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63. This is a fossilised faeces or excreta of animals.

(1) Coal balls (2) Amber (3) Coprolite (4) Nodule

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64. The seed of lyginopteris is called

(1) Crossotheca (2) Kaloxylon (3) Sphenopteris (4) Lagenostoma

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65. Which of the following is a fossil pteridosperm ?

(1) Lyginopteris (2) Cordaites

(3) Bennettites (4) Ginkgo

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66. According to Vavilov, the cultivated crops originated from

(1) 4 domestication centers (2) 6 domestication centers

(3) 8 domestication centers (4) 10 domestication centers

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67. The ploidy of *Triticum aestivum* is

(1) Diploid (2) Triploid (3) Tetraploid (4) Hexaploid

SPACE FOR ROUGH WORK

68. International Rice Research Institute is located in

(1) Philippines (2) UK (3) India (4) Japan

69. The botanical name of Ragi (finger millet) is

(1) *Panicum miliaceum* (2) *Eleusine coracana*

(3) *Dolichos lablab* (4) *Avena sativa*

70. Which of the following is ***not*** a kind of tea ?

(1) Green tea (2) Oolong tea (3) Let-pet tea (4) Red tea

71. The yellow coloured dye is obtained from *Crocus* (Saffron), from its

(1) Leaves (2) Bark

(3) Stigma (4) Young flower bud

72. Ratooning is practised in

(1) Groundnut plant (2) Rubber tree

(3) Sugarcane plant (4) Pea plant

73. Which of the following is ***not*** an essential oil ?

(1) Olive oil (2) Lemon grass oil

(3) Jasmine oil (4) Sandalwood oil

74. Lloyd Botanical Garden is situated at

(1) England (2) Lucknow (3) Berlin (4) Darjeeling

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75. The dried specimens of plants in the herbaria are poisoned with

(1) Potassium cyanide

(2) Laurylpentachloride

(3) Dichloro Diphenyl Tetraacetic acid

(4) Bromophenol

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76. The fluid-mosaic model for cell membrane was given by

(1) Singer and Nicolson (2) Benda and Lyon

(3) Singer and Johnson (4) Singer and Davson

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77. Cells placed in a hypotonic solution

(1) shrink (2) swell

(3) remain unaffected (4) dissolve

---

78. The diameter of the macrofibrils of the cell wall is upto

(1) 4·0 μm (2) 1·0 μm (3) 0·8 μm (4) 0·5 μm

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79. The invaginations of plasma membrane in bacteria are known as

(1) ribosomes (2) mesosomes (3) polysomes (4) episomes

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80. The most widely used fixative in electron microscopy is

(1) ester (2) ketone

(3) formaldehyde (4) ether

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81. Cell organelles known as 'suicide bags' of the cells are

(1) mitochondria (2) lysosomes

(3) episomes (4) peroxisomes

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82. Peroxisomes contain enzyme

(1) catalase (2) ligase (3) lactase (4) endonuclease

83. The sedimentation coefficient of the ribosome with 30S and 50S subunits is

(1) 80S (2) 70S (3) 60S (4) 100S

84. The stalked particles present on the inner membrane of mitochondria are known as

(1) subunits of Parson (2) subunits of Fernandez-Moran

(3) subunits of Nelson (4) subunits of Johnson

85. The F_1 particles or elementary particles found in the mitochondria are

(1) sessile (2) liquid (3) stellate (4) stalked

86. The microtubules of spindle fibres are composed of

(1) chitin (2) tubulins (3) keratin (4) albumin

87. Down syndrome is due to

(1) monosomy – 21 (2) trisomy – 12

(3) trisomy – 21 (4) monosomy – 12

88. Lateral loops are observed in

(1) lampbrush chromosome (2) salivary gland chromosome

(3) Both (1) and (2) (4) None of the above

89. When the inverted segment occurs on the chromosome arm and does not include the centromere, then the inversion is called as

(1) pericentric inversion (2) paracentric inversion

(3) acentric inversion (4) helocentric inversion

SPACE FOR ROUGH WORK

90. Cri-du-chat syndrome results from the deletion of the short arm of chromosome

(1) 12 (2) 07 (3) 05 (4) 15

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91. Raphanobrassica is a/an

(1) aneuploid (2) autopolyploid (3) monoploid (4) allopolypoid

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92. Polyploid can be induced experimentally by using

(1) alcohol (2) colchicine (3) acetone (4) ether

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93. The nucleolus was first described by

(1) Fahn (2) Fontana (3) Frank (4) Frazer

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94. In a nucleosome, the linker histone is

(1) H_2A (2) H_3 (3) H_4 (4) H_1

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95. The process of crossing-over in meiosis starts during

(1) Leptotene (2) Pachytene (3) Zygotene (4) Diakinesis

---

96. Linkage in *Drosophila melanogaster* was first reported by

(1) Watson (2) Morgan (3) Muller (4) Monod

---

97. In a double cross-over, when the same two chromatids of a tetrad are involved in the formation of 2 chiasmata, it is known as

(1) multiple chiasma (2) reciprocal chiasma

(3) single chiasma (4) complementary chiasma

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98. Diploid organisms that have 2 different alleles of a specific gene locus are said to be

(1) homozygous (2) heterozygous (3) azygous (4) trizygous

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99. In *Paramoecium* cytoplasmic particles transmitted through the cytoplasm are known as

(1) Alpha particles (2) Kappa particles

(3) Sigma particles (4) Beta particles

---

100. Hypertrichosis in man is due to

(1) recessive X-linked gene (2) dominant X-linked gene

(3) Y-linked gene (4) somatic gene

---

101. Barr bodies are absent in

(1) Klinefelter syndrome (2) Normal females

(3) Normal males (4) Triple X-female

---

102. A mutation involving a change from a purine-pyrimidine base pair to the other purine-pyrimidine base pair is known as

(1) neutral mutation (2) tranversion mutation

(3) nutritional mutation (4) transition mutation

---

103. Kernel colour in wheat is an example of

(1) quantitative inheritance (2) polygenic inheritance

(3) monogenic inheritance (4) cytoplasmic inheritance

---

104. Skin colour in man is due to

(1) qualitative inheritance (2) quantitative inheritance

(3) monogenic inheritance (4) cytoplasmic inheritance

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105. The trihydrid Aa Bb Cc is test crossed to the triple recessive aa bb cc and the following phenotypes are obtained in the progeny :

64 abc, 2 abc, 11 aBc, 18 aBC, 14 AbC, 17 Abc, 3 ABc, 71 ABC

How many loci are linked ?

(1) One loci linked (2) Two loci linked

(3) Three loci linked (4) All of them linked

---

106. In Z-DNA, the number of base pairs, per helical turn are

(1) 10·9 (2) 10·1 (3) 21·1 (4) 10·0

---

107. The process of protein synthesis is terminated by the codon

(1) UUG (2) UAA (3) UUU (4) CCU

---

108. The codon AAA codes for the amino acid

(1) Lysine (2) Serine (3) Valine (4) Leucine

---

109. The Operon model for the regulation of lac genes was proposed by

(1) Beadle and Tatum (2) Watson and Crick

(3) Jacob and Monod (4) Nilsson-Ehle

---

110. The genetic code is

(1) triplet code (2) non overlapping

(3) universal (4) All the above

---

111. Germplasm theory which was published in the book *Das Keimplasma* was preposed by

(1) Stebbins (2) August Weismann

(3) Mullar (4) S. Wright

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112. The concept of natural selection was explained by Darwin in his masterpiece

(1) *Principles of Geology* (2) *Philosophie Zoologique*

(3) *The Origin of Species* (4) None of these

---

113. rRNA is synthesized by the enzyme

(1) RNA polymerase I (2) RNA polymerase II

(3) RNA polymerase III (4) Both (1) and (3)

---

114. The removal of introns from eukaryotic pre-mRNA occurs in the nucleus in complexes called as

(1) spliceosomes (2) quantosomes

(3) dictyosomes (4) mesosomes

---

115. The double-helix model of DNA was proposed by Watson and Crick in

(1) 1850 (2) 1950 (3) 1953 (4) 1853

---

116. Which of the following methods of plant breeding is the easiest method of crop improvement ?

(1) Hybridization (2) Plant Introduction

(3) Mass Selection (4) Mutation Breeding

---

117. Mass Selection method of crop improvement is followed in

(1) Cross Pollinated Crops

(2) Self Pollinated Crops

(3) Both Cross and Self Pollinated Crops

(4) Vegetatively Propagated Plants

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118. The correct sequence of hybridization technique is

(1) Emasculation – Bagging – Crossing – Labelling

(2) Emasculation – Crossing – Bagging – Labelling

(3) Labelling – Bagging – Crossing – Emasculation

(4) Crossing – Bagging – Labelling – Emasculation

---

119. In backcross method, the F_1 is crossed to

(1) Recipient parent (2) Donor parent

(3) Both the parents (4) Allowed to self pollinate

---

120. Which of the following radiations are non-ionising ?

(1) α-rays (2) X-rays (3) γ-rays (4) UV-rays

---

121. The growth hormone used in Plant Tissue culture is

(1) Auxins (2) Cytokinins

(3) Giberellins (4) All the above

---

122. Somatic embryos are encapsulated in a suitable matrix to produce synthetic seeds

(1) Sodium purpureate (2) Sodium alginate

(3) Sodium hexametaphosphate (4) Sodium hydroxide

---

123. Which of the following is ***not*** a type of ELISA (Enzyme Linked Immuno-Sorbent Assay) ?

(1) DAS – ELISA (2) DAC – ELISA

(3) PAS – ELISA (4) PAC – ELISA

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124. The plasmid present in *Agrobacterium tumefaciens* is

(1) Ti plasmid (2) Ai plasmid

(3) Ri plasmid (4) Gi plasmid

---

125. In the Transgenic Tobacco plant, the transfer of a gene from *E. coli* to tobacco was for

(1) Cyclodextrin glucosyltransferase (2) Mannitol dehydrogenase

(3) Acetyl Co-A reductase (4) Nopaline synthatase

---

126. Physical Gene transfer in plants can take place by

(1) DNA Mediated Gene Transfer

(2) Agroinfection

(3) RNA Mediated Gene Transfer

(4) Polymerase Chain Transfer

---

127. Which of the following is ***not*** a molecular marker ?

(1) RFLP (2) RAPD (3) VNTR (4) VAPD

---

128. For cloning large DNA sequences, which vector can be employed ?

(1) YAC (2) PAC (3) ZAC (4) TAC

---

129. The plasmid prepared by Bolivar and Rodriguez is

(1) pUC (2) pBR322 (3) YRp (4) YAC

---

130. Which of the following methods is used to obtain cybrids ?

(1) Fusion of normal protoplasts from one parent with enucleated protoplast from the other parent

(2) Fusion of normal protoplast from one parent and protoplast containing non-viable nuclei from the other

(3) Selective elimination of one of the nuclei from the heterokaryon

(4) Any of the above

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131. W.S. Gosset designed

(1) t-test (2) Z-test (3) χ^2-test (4) F-test

---

132. When the values of X and Y are inversely proportional to each other, then the coefficient of correlation is

(1) Perfectly +ve (2) Perfectly –ve

(3) Moderately +ve (4) Moderately –ve

---

133. Yate's correction is applied in

(1) Paired t-test (2) χ^2-test

(3) Unpaired t-test (4) Z-test

---

134. Which of the following shows no correlation ?

(1) The age of husband and wife

(2) Shoe size and intelligence

(3) Years of education and income

(4) Amount of rainfall and yield of crop

---

135. Regression coefficient of Y for one unit of X can be found out by the formula

(1) $b_{xy} = \frac{\Sigma(X - \bar{X})(Y - \bar{Y})}{\Sigma(X - \bar{X})^2}$ (2) $b_{xy} = \frac{\Sigma(X - \bar{X})^2}{\Sigma(X - \bar{X})(Y - \bar{Y})}$

(3) $b_{xy} = \frac{\Sigma(\bar{X} - X)(Y - \bar{Y})}{\Sigma(X - \bar{X})^2}$ (4) $b_{xy} = \frac{\Sigma(X - \bar{X})(\bar{Y} - Y)}{\Sigma(X - \bar{X})^2}$

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136. *Nitrosomonas* and *Nitrobacter* are termed

(1) Ammonifying bacteria (2) Nitrifying bacteria

(3) Denitrifying bacteria (4) Nitrogen fixing bacteria

---

137. The reduction of Nitrogen to Ammonia requires

(1) 6 electrons (2) 2 electrons

(3) 8 electrons (4) one electron

---

138. In a molecule of water the average hydrogen – oxygen interatomic distance is

(1) 0·965 nm (2) 0·0965 μm (3) 0·0965 nm (4) 0·0965 pm

---

139. RuBisCO is conjugated enzyme having molecular weight of

(1) 560 kd (2) 126 kd (3) 255 kd (4) 600 kd

---

140. Primary acceptor of CO_2 in C_4 plants is

(1) RuDP (2) NaOH

(3) Phosphophenol pyruvate (4) ATP

---

141. IUCN is also known as

(1) World Conservation Union (2) World Population Union

(3) World Wildlife Union (4) World Nature Union

---

142. Chief plants of Reed swamp stage are

(1) *Phragmites* and *Scirpus* (2) *Salix* and *Cornus*

(3) *Azolla* and *Lemna* (4) *Carex* and *Juncus*

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143. Succession of micro-organisms that occur within micro-environment is called

(1) Sedge meadow (2) Phytoplankton

(3) Zooplankton (4) Serule

---

144. The Ganga Action Plan was launched in

(1) 1986 (2) 1968 (3) 1996 (4) 2000

---

145. Chipko Movement was for

(1) protection of air (2) protection of tiger

(3) protection of tribals (4) protection of trees

---

146. The World Wildlife Fund was launched in India in

(1) 1945 (2) 1960 (3) 1969 (4) 1980

---

147. Genomic database consists of the gene sequence regarded as

(1) R-DNA sequences (2) C-DNA sequences

(3) mutant DNA sequences (4) T-DNA sequences

---

148. The EMBnet was established in the year

(1) 1998 (2) 1978 (3) 1988 (4) 1968

---

149. CDFD is EMBnet Associate Node for

(1) India (2) Japan (3) Sweden (4) China

---

150. Find the odd abbreviation/database out.

(1) EMBL (2) GenBank

(3) DDBJ (4) SWISS – PROT

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सूचना - (पृष्ठ 1 वरुन पुढे....)

(8) प्रश्नपुस्तिकेमध्ये विहित केलेल्या विशिष्ट जागीच कच्चे काम (रफ वर्क) करावे. प्रश्नपुस्तिकेव्यतिरिक्त उत्तरपत्रिकेवर वा इतर कागदावर कच्चे काम केल्यास ते कॉपी करण्याच्या उद्देशाने केले आहे, असे मानले जाईल व त्यानुसार उमेदवारावर शासनाने जारी केलेल्या "परीक्षांमध्ये होणाऱ्या गैरप्रकारांना प्रतिबंध करण्याबाबतचे अधिनियम-82" यातील तरतुदीनुसार कारवाई करण्यात येईल व दोषी व्यक्ती कमाल एक वर्षाच्या कारावासाच्या आणि/किंवा रुपये एक हजार रकमेच्या दंडाच्या शिक्षेस पात्र होईल.

(9) सदर प्रश्नपत्रिकेसाठी आयोगाने विहित केलेली वेळ संपल्यानंतर उमेदवाराला ही प्रश्नपुस्तिका स्वतः बरोबर परीक्षाकक्षाबाहेर घेऊन जाण्यास परवानगी आहे. **मात्र परीक्षा कक्षाबाहेर जाण्यापूर्वी उमेदवाराने आपल्या उत्तरपत्रिकेचा भाग-1 समवेक्षकाकडे न विसरता परत करणे आवश्यक आहे.**

नमुना प्रश्न

Pick out the correct word to fill in the blank :

Q. No. 201. I congratulate you _____ your grand success.

(1) for (2) at (3) on (4) about

ह्या प्रश्नाचे योग्य उत्तर "(3) on" असे आहे. त्यामुळे या प्रश्नाचे उत्तर "(3)" होईल. यास्तव **खालीलप्रमाणे** प्र.क्र. **201** समोरील उत्तर-क्रमांक "③" हे वर्तुळ पूर्णपणे छायांकित करून दाखविणे आवश्यक आहे.

प्रश्न क्र. **201.** ① ② ● ④

अशा पद्धतीने प्रस्तुत प्रश्नपुस्तिकेतील प्रत्येक प्रश्नाचा तुमचा उत्तरक्रमांक हा तुम्हाला स्वतंत्ररीत्या पुरविलेल्या उत्तरपत्रिकेवरील त्या त्या प्रश्नक्रमांकासमोरील संबंधित वर्तुळ पूर्णपणे छायांकित करून दाखवावा. **ह्याकरिता फक्त काळ्या शाईचे बॉलपेन वापरावे, पेन्सिल वा शाईचे पेन वापरू नये.**

कच्च्या कामासाठी जागा / SPACE FOR ROUGH WORK