Question Papers

ExamCode: RPSC_BOT_BOTANY

1. **Resolution power of human eye is about-**
   1) 0.2 millimeters
   2) 0.2 micrometers
   3) 0.2 nanometers
   4) 2.0 micrometers

2. **Resolution power of the light microscope is-**
   1) 20.0 micrometers
   2) 02.0 micrometers
   3) 00.2 micrometers
   4) 20.0 nanometers

3. **Prions are-**
   1) Infectious protein bodies
   2) RNA
   3) DNA
   4) Both RNA and DNA

4. **Select incorrect statement-**
   1) Viroids are minute self-replicative RNA
   2) Viroids were discovered in Potato spindle tubers
   3) Viroids are sensitive to DNase
   4) Viroids are sensitive to RNase

5. Make correct pairs.

Group-I		Group-II	
a	Blue green algae	1	Rhizobia
b	Legumes	2	Heterocyst
c	Agrobacterium tumefaciens	3	Nucleoid
d	Prokaryotic hereditary material	4	T-DNA borders

Codes:

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

6. **Select the odd one-**
   1) Kelp
   2) Iodine
   3) Rhodophyceae
   4) Phaeophyceae

7. **Cephaleuros-**
   1) Is a diatom
   2) Causes red rusts of many plants including tea
   3) Is a nitrogen fixing blue green algae
   4) Is a lichen

8. **Downy mildew of Bajra is caused by-**
   1) Claviceps
   2) Sclerospora graminicola
   3) Plasmopara viticola
   4) Phytophthora infestans

9. Make correct pairs.

	Group-I		Group-II
a	Powdery Mildews	1	Puccinia
b	Rusts	2	Albugo
c	White Rust	3	Colletotrichum falcatum
d	Red Rot	4	Ascomycetes

Codes:

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

10. Make correct pairs.

	Group-I		Group-II
a	Ergot alkaloids	1	Yeast fungi
b	Fermentation	2	Claviceps
c	Aflatoxins	3	Morchella esculenta,
d	Aflatoxins	4	Aspergillus fungi

Codes:

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

11. Volvocine algae are good example of unicellular to multicellular organization and origin of multicellularity. Given here are some members of the group. Arrange these according to cellular levels of organization (from simple to complex multicellularity). (1) Volvox (2) Chlamydomonas (3) Gonium (4) Pandorina (5) Pleodorina

1) 1, 4, 3, 2, 5
2) 4, 1, 2, 5, 3
3) 2, 3, 4, 5, 1
4) 3, 1, 5, 4, 2

12. Select the incorrect statement-

1) Cell theory is one of the central unifying idea in biology
2) Cell theory was proposed by Schleiden and Schwann
3) Charles Darwin's theory of evolution is the most important generalization in Biology
4) Central Dogma of molecular biology was proposed by James Watson

13. Select incorrect statement-regarding Lichens.

1) Lichens are fungi that discovered agriculture. They cultivate partners that manufacture food by photosynthesis. Sometimes the partners are Protista (unicellular green algae: microalgae)
2) Other time the partners of lichens are Monera, the Blue Green Algae
3) Some fungi associate with both the Monera and Protista at once
4) Lichen fungi are parasites on algal partner(s)

14. Select incorrect statement-

1) In some species of Anthoceros stoma-like pores or slits are present on ventral surface of the thallus. These are called slim pores

2) Every thallus cell of Anthoceros contains one large chloroplast and has a pyrenoid in the center

3) Cavities of Anthoceros contains blue green algae (Nostoc colonies)

4) Ventral surface of the thallus of Anthoceros bears numerous multicellular branched rhizoids.

15. The concept of origin of land plants from green algae was suggested and supported by an Indian scientist.whose name is

1) P.N.Mehra
2) S.R.Kashyap
3) T.V.Desikachary
4) N.S.Rangaswamy

16. Scientist who is considered father of bryology in India is

1) P.N.Mehra
2) S.R.Kashyap
3) P.Maheshwari
4) B.M.Johri

17. Physcomitrella patens, a model organism for modern plant biology/New biology is-

1) Primitive angiosperm
2) A Gymnosperm
3) A member of pteridophyte group
4) A moss (Bryophyte)

18. Make correct pairs.

Group-I		Group-II	
a	Sword Fern	1	Azolla species
b	Tree ferns	2	Polystichum munitum
c	Mosquito Fern	3	Adiantum spp
d	Maidenhair Fern	4	Cyathea/Dicksonia species

Codes:

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

19. Select incorrect statement-

1) alpha-Amanitin is toxic to RNA Polymerase -II

2) RNA Polymerase- I is resistant to alpha-Amanitin

3) RNA Polymerase- III is affected negatively by higher concentrations of alpha-Amanitin

4) alpha-Amanitin producing fungi are edible

20. Select incorrect statement-

1) Bryophytes are amphibian plants

2) Bryophytes produce embryos

3) Pteridophytes are vascular plants; some of these exhibit heterospory

4) Stomata are present in all the bryophytes

21. Select incorrect statement-

1) Salviniales order includes two genera Salvinia and Azolla that are free floating in water

2) Salvinia and Azolla bear well developed root systems

3) Azolla leaves are bilobed and harbor Anabaena azollae that fix free nitrogen

4) The same species of Anabaena resides in the leaves of the Azolla all over the world.

22. Select incorrect statement-

1) The male gametes are non-motile in gymnosperms

2) Vessels are absent in the vascular systems of Gymnosperms

3) Endosperm of the gymnosperms is haploid

4) Companion cells are present in gymnosperms

23. Select incorrect statement-

1) The coralloid roots are present in living cycads and they contain endophytic Rhizobia

2) Birbal Sahni was expert on fossil gymnosperms

3) The sperm of Cycas is the largest of all known male gametes in plants

4) Roasted seeds/endosperm of Ginkgo is eaten.

24. A few species of Isoetes are found in India. Isoetes belongs to-

1) Lycopsida

2) Psilopsida

3) Sphenopsida

4) Pteropsida

25. Select incorrect statement-

1) Rhynia gwynne-vaughanii and R. major were described by R.Kidston and W.H.Lang

2) Rhynia gwynne-vaughanii was a fern and R. major a bryophyte

3) Rhynia species are root-less and leafless with dichotomously branched aerial shoots and these reproduce profusely

4) Psilotum of Psilopsida is found in India

26. Make correct pairs.

	Group-I		Group-II
a	Ephedra gerardiana	1	Dry and hot desert
b	Ephedra foliata	2	Dry and Cold desert
c	Pinus gerardiana	3	Paclitaxel
d	Taxus species	4	Chilgoza

Codes:

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

27. Phog/Phogra is-

1) Calligonum polygonoides

2) Ephedra foliata

3) Polygonum species

4) Haloxylon species

28. Guggul gum-resin is obtained from-

1) Commiphora wightii
2) Aquilaria agallocha
3) Boswellia serrata
4) Sterculia urens

29. Till (sesame) is queen of edible oils. This is cultivated in Rajasthan and belongs to family-

1) Tilliaceae
2) Pedaliaceae
3) Brassicaceae
4) Oleaceae

30. Bajra/Bajri is major crop of Rajasthan. One of the following statements about this crop is incorrect select it:

1) Center of origin/diversity of Bajra is diffused and it is in Africa
2) Botanical name for bajra is Pennisetum typhoides
3) All India Coordinated Pearl Millet Improvement Project (AICPMIP) is located at Jodhpur
4) Bajra is drought hardy and heat tolerant crop

31. Guar gum is obtained from Cyamopsis tetragonoloba, the cluster bean. Find out incorrect statement on guar-

1) The guar gum is Galactomannan polysaccharides
2) The guar gum is obtained from endosperm of the seed
3) Guar belongs to the family Burseraceae that has many gum yielding plants
4) India is major guar gum exporting country of the world

32. The Directorate of Rapeseed-Mustard Research (DRMR) for research on Rapeseed, and Taramira is located in-

1) Uttar Pradesh
2) Haryana
3) Rajasthan
4) Madhya Pradesh

33. Make correct pairs.

Group-I		Group-II	
a	Moth	1	Simmondsia chinensis
b	Jojoba	2	Vigna aconitifolia
c	Jatoon/Olive	3	Withania coagulans
d	Paneerbandh/ Paneer Dodi	4	Olea europaea

Codes:

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

34. Make correct pairs.

Group-I		Group-II	
a	Isabgol	1	Anogeissus
b	Nagori/Kasuri Methi	2	Plantago ovate
c	Jeera/Cummin	3	Trigonella
d	Indrokh/Dhav	4	Umbelliferae

Codes:

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

35. Make correct pairs.

Group-I		Group-II	
a	Safed Dhav	1	Terminalia bellirica
b	Harar/Harita ki	2	Phyllanthus spp.
c	Bahera	3	Anogeissus latifolia
d	Bhui Anwala	4	Terminalia chebula

Codes:

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

36. Kans grass is relative of sugarcane. The botanical name of Kans grass is-

1) Saccharum spontaneum
2) Narenga porphyrocoma
3) Saccharum robustum
4) Erianthus contortus

37. Select incorrect statement-

1) Nicolay Ivanovich Vavilov was a Russian who identified the centers of origin of cultivated plants
2) Nicolay Ivanovich Vavilov was sentenced to death in July 1941. In 1942 his sentence was commuted to twenty years' imprisonment; he died in prison in 1943, of starvation
3) Vavilov supported the non-Mendelian concepts of Trofim Lysenko
4) N.I. Vavilov Institute of Plant Industry in St. Petersburg still maintains one of the world's largest collections of plant genetic material

38. The idea of center of diversity of crop plants was given by-

1) Trofim Lysenko
2) Jack R. Harlan
3) Harry Harlan
4) G.L. Stebbins

39. Center of origin/diversity of Potato-

1) North-western South America (Bolivia, Ecuador, and Peru)
2) Mexico
3) North America
4) Russia

40. Cotton is major fiber crop of the world. Find out wrong statement regarding it:

1) Gossypium herbaceum is diploid and old world cotton
2) Gossypium arboreum is tetraploid and old world cotton
3) Gossypium hirsutum is tetraploid
4) Gossypium barbadense is tetraploid

41. Select odd member-

1) Utricularia vulgaris
2) Dionaea muscipula
3) Nepenthes khasiana
4) Calotropis procera

42. Select odd member-

1) Striga hermonthica
2) Orobanche aegyptiaca
3) Cuscuta chinensis
4) Leptadenia reticulata

43. Select incorrect statement-

1) Triticum sphaerococcum popularly known as Indian wheat (now disappeared) is hexaploid
2) The common bread/chhapati wheat is Triticum aestivum and it is hexaploid
3) Triticum durum or the Macaroni wheat is hexaploid
4) Kharchia wheat of Rajasthan is Triticum aestivum and it is hexaploid

44. Rice is cultivated throughout the word. The Asian Rice is Oryza sativa and the African Rice is-

1) Oryza glaberrima
2) Oryza brachyantha
3) Oryza rufipogon
4) Oryza longistaminata

45. Indigo dye is obtained from-

1) Indigofera tinctoria
2) Indigofera cordifolia
3) Indigofera hochstetteri
4) Indigofera linifolia

46. Double coconut/ love nut is-

1) Lodoicea maldivica
2) Oenocarpus circumtextus
3) Livistona drudei
4) Cocos nucifera

47. Center of origin /diversity for Ground nut (Arachis hypogaea) is-

1) South America
2) Africa
3) North America
4) India

48. A major event occurred in the eukaryotic line that excluded animals and fungi. This involved development of chloroplast by endosymbiosis. The theory of endosymbiosis was proposed by-

1) R.H.Whittaker
2) Carl Woese
3) Cavalier-Smith
4) Lynn Margulis

49. Select incorrect statement.Basic principles of systematics.

1) Identification, description and nomenclature of plants
2) Phylogeny of plants is determined
3) Classification of plants is done
4) Study of exploitation and utilization of plants is essential

50. Select incorrect statement-

1) Taxon(plural taxa) refers to a taxonomic group belonging to any trank

2) The generic (genus) name is a uninominal singular word treated as a noun

3) The name of a species is a binomial: consisting of two words, generic name followed by a specific epithet

4) A specific epithet is named after a person or a place only

51. Select incorrect statement-

1) Cyathium is complex type of inflorescence in the genus Euphorbia

2) Thyrse is inflorescence of Amaranthaceae

3) Verticillaster is characteristic inflorescence of family lamiaceae

4) Hypanthodium is typical inflorescence of figs

52. Select correct statement-

1) Pomegranate (Punica granatum) is Pome fruit

2) Tomato and brinjal are drupe fruits

3) Pepo is fruit of cucurbits formed from inferior ovary

4) Syconium/Syconus is fruit of Jackfruit Katahal (Artocarpus heterophyllus)

53. The largest number of plant specimens are in herbarium of-

1) Royal Botanical Garden, Kew, Surrey, UK

2) Museum of Natural History, Paris, France

3) New York Botanical Garden, New York, USA

4) Komarov botanic Institute, St Petersburg (Leningrad), Russia

54. Select incorrect statement-

1) Carolus Linnaeus established the fact of sexuality in flowering plants

2) Carolus Linnaeus published Species Plantarum in 1753

3) Linnaeus established the binomial system of nomenclature

4) Linnaeus did aim at natural classification of plants

55. Classification of seed plants presented by Bentham and Hooker is considered the most well developed natural system. This was published in a three-volume work Genera Plantarum (1862-83). One major demerit of this classification system is-

1) Seed plants are categories in three classes

2) Dicotyledons of Class-1 are placed in three subclasses

3) Monocotyledons are placed in Class-3

4) Gymnosperms are placed between Dicotyledons and Monocotyledons in Class-2

56. Select incorrect statement-

1) Wood represent secondary xylem constituting the bulk of trees and shrubs formed through the activity of vascular cambium

2) Wood consists of tracheids and vessels

3) Angiosperm woods are never vessel-less

4) Angiosperm ancestors were probably vessel-less

57. Select incorrect statement-

1) The lowest number of chromosomes (n=2)in plants is recorded in Haplopappus gracilis

2) The record of the highest chromosome number (n=630) is found in Ophioglossum reticulatum

3) The alga Spirogyra cylindrica also contains n=2 chromosomes

4) Bread wheat has n=14 chromosomes.

58. Select incorrect statement-

1) Morphine is produced by Papaver somnifera

2) Atropine is produced by Atropa species

3) Alkalaoids are present in specialized parts/tissues of plants

4) Marijuana/Bhang is product of sunn hemp plant

59. Select incorrect statement-

1) Apocyanceae and Asclepiadaceae belong to Series-3, Bicarpellatae of Gamopetalae

2) Rubiaceae and Asteraceae are in Series-1, Inferae of Gamopetalae

3) Primulaceae and Lamiaceae are in Series-2, Heteromerae of Gamopetalae

4) Rutaceae belongs to Series -2,Disciflorae,of polypetalac

60. Select correct statement-

1) Chenopodiaceae and Amaranthaceae are in series Curvembryeae

2) Euphorbiaceae and Moraceae are in Gamopetalae

3) Zingiberaceae members are rhizomatous plants

4) Potamogetonaceae is family of dicots

61. Curcuma longa (turmeric/Haldi) belongs to-

1) Zingiberaceae

2) Musaceae

3) Cannaceae

4) Sedge family

62. Khejari (Prosopis cineraria) is member of-

1) Caesalpinioideae

2) Faboideae/Papilionoideae

3) Mimosoideae

4) Myrtle family

63. Make correct pairs.

Group-I		Group-II	
a	Black Pepper	1	Tinospora cordifolia
b	Clove oil	2	Piper nigrum
c	Giloy	3	Tribulus terrestris
d	Chota gokharu	4	Syzygium aromaticum

Codes:

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

64. Select incorrect statement-

1) Genome is sum total of genetic information (DNA/ number of chromosomes) of a species in single haploid cell

2) Biodiversity is richness of species and genes in an environment

3) Domestication is bringing wild germplasm under human management

4) Plastid in green plants have eukaryotic types of genes

65. Select incorrect statement-

1) Isoenzymes are multiple molecular forms of enzymes with similar catalytic activities

2) Isozymes are enzymes that are products of different genes

3) Allozymes are multiple molecular forms of enzymes from different alleles of a gene,

4) Isoenzyme and allozymes both have similar type of amino-acids/polypeptides

66. Select incorrect statement-

1) Apomixis is defined as the asexual formation of a seed from the maternal tissues avoiding the processes of meiosis and fertilization.

2) Apomixis occurs in Citrus and Mango

3) Pennisetum species do not exhibit apomixis

4) Apomictic seed are clonal seeds

67. Select incorrect statement-

1) Plant perpetuate in nature through endosperm

2) Endosperm of several plants have been cultured to produce triploid plants

3) Endosperm tissue of most of the angiosperm are triploid and are storage tissue

4) In general endosperm tissues have higher dosages of genes of female parent.

68. Successful attempts were made through anther culture for production of haploid plants by-

1) P. Maheshwari and B.M.Johri

2) S.S.Bhojwani and B.M.Johri

3) Shipra-Guha Mukherjee and S.C.Maheshwari

4) Sipra-Guha Mukherjee and P.Maheshwari

69. Select incorrect statement-

1) Embryophytes and algae are distantly related yet they are similar in their possession of carbohydrate-rich cell walls,

2) Cell walls are of integral importance being involved in many physiological processes.

3) Bacteria and mycoplasmas have cell walls composed of peptidoglycan

4) Cell walls of Oomycetes do not contain chitin, which occurs in the cell walls of true fungi.

70. Select incorrect statement-

1) The pairing of complementary deoxyribonucleic acid (DNA) strands produce DNA–DNA hybrids

2) Pairing of complementary DNA–RNA strands produce DNA–RNA hybrids

3) Hybrid formation are based on the property of specific hydrogen bonds forming between complementary nucleotide base pairs.

4) Western blotting (protein immobilization) is based on principle of nucleic acid hybridization

71. Select incorrect statement-

1) Leaves are produced in succession on the Shoot Apical Meristem (SAM) of a plant

2) Leaf morphogenesis includes initiation, acquisition of sub-organ identities, and tissue differentiation

3) The expression of various genes is involved in leaf morphogenesis

4) All embryophytes have true vascular- ized leaves

72. Select the correct statement-

1) SAMs contain a population of cells with characteristics of stem cells

2) SAM cells are totipotent

3) Shoot apical meristems divide and branch laterally in order to produce multiple branching stems.

4) Root apical meristems also branch at the ends of roots to produce new roots

73. Select incorrect statement Wood (secondary xylem) is manufactured by a succession of major steps including-

1) Cell division, cell expansion (elongation and radial enlargement)

2) Cell wall thickening (cellulose, hemicellulose, cell wall proteins, lignin biosynthesis and deposition),

3) Programmed cell death

4) Formation of Hard Wood (HD) with functional parenchyma

74. Genetic Male Sterility is governed by nuclear genes; in most of the cases by recessive (ms) gene. However it is rarely controlled by single dominant gene (Ms) as in-

1) Sunflower
2) Safflower
3) Rice
4) Barley

75. Heteromorphic-sporophytic self-compatibility is found in-

1) Solanum and Petunia species
2) Primula species
3) Brassica species
4) Prunus species

76. The term "ecosystem" was first used in scientific publication by-

1) Eugene Odum
2) Arthur G.Tansley
3) G. Evelyn Hutchinson
4) Howard T. Odum

77. A permafrost is-

1) Perennially frozen ground
2) Methyl clathrates–rich area
3) Any ice-rich area
4) High latitudes in and around the Arctic and Antarctic regions

78. The word "ecology" ("Ökologie") was coined by

1) German scientist Ernst Haeckel
2) G. Evelyn Hutchinson
3) Thomas Robert Malthus
4) James Lovelock

79. An example of endemic plant species of Rajasthan-

1) Capparis decidua
2) Prosopis cineraria
3) Cenchrus biflorus
4) Caralluma edulis

80. Select odd member-

1) Pearl-millet
2) Sugarcane
3) Maize
4) Rice

81. Dwarfism is a desirable trait for many agricultural plants. Dwarfism is caused by mutations in genes controlling the biosynthesis or signaling pathway of a plant hormone. The hormone is-

1) Gibberellic acid (GA)
2) Ethylene
3) Auxin
4) Strigolacton

82. The plant hormone that promote fruit ripening-

1) ABA
2) Ethylene
3) Brassinosteroid
4) Cytokinin

83. Select non-CAM plant

1) Agave
2) Isoetes howellii
3) Ananas comosus (Pineapple)
4) Malus domestica (apple)

84. Shikonin(alkanin) is obtained from-

1) Momordica dioica
2) Arnebia Species
3) Lysium barbarum
4) Blepharis species

85. Select incorrect statement-

1) Photorespiration interferes with CO2 fixation by enzyme Rubisco
2) Photorespiration uses energy that could otherwise be used for photosynthetic carbon reduction
3) Photorespiration causes the release of CO_2 from previously fixed carbon
4) Photorespiration substantially reduces the efficiency of photosynthesis in plants, especially crop plants such as Zea mays

86. Plant hormone that affects stomatal movement the most, is-

1) ABA
2) Strigolacton
3) Ethylene
4) IBA

87. If seeds are germinated in the dark, the seedling(s) have elongated stems, undifferentiated chloroplasts and unexpanded leaves. The control of plant growth, development, and differentiation in response to growth in darkness is called as-

1) Skotomorphogeneis
2) Photomorphogeneis
3) Etiolation
4) Phyto-skoto-morphogenesis

88. Haberlandt's dream of producing a whole plant from a single isolated cell was realized by-

1) I.K.Vasil and A.C.Hildebrandt
2) V.Vasil, and A.C. Hildebrandt
3) F.C.Steward, M.O. Mapes and K Mears
4) J.Reinert

89. Monocots are difficult to grow in vitro. Applications of plant tissue culture technology in cereal,palms and grasses were slow. The use of synthetic auxin(s) in culture media helped the tissue culturist to succeed. The synthetic auxin used was/is-

1) TIBA
2) NAA
3) 2, 4-Dichlophenoxy acetic acid (2,4-D)
4) IPA

90. Hairy Root disease is caused by-

1) Agrobacterium tumefaciens
2) Agrobacterium rhizogenes
3) Agrobacterium rubi
4) Agrobacterium radiobacter

91. Transplastomic plants are produced by-

1) Transfer of plastids of one species to the other
2) Genetic transfer of foreign gene to plastome (plastid transformation) using particle gun technology
3) Genetic transfer of foreign gene into mitochondrial genomes
4) Fusion of enucleated protoplast with nucleated protoplasts by electro fusion

92. Select pair of names of scientists who contributed in molecular genetics, each of whom got two Nobel Prizes-

1) Barbara McClintock and N.E. Borlaug
2) L. C. Pauling and F. Sanger
3) S. Brenner and S. Altman
4) S. B. Prusiner and T.R Cech

93. Polymerase Chain Reaction (PCR) was improved and used practically by-

1) K. Kleppe and H.G. Khorana
2) Kary B. Mullis
3) Michael Smith
4) H.G. Khorana

94. Which one of the following is not PCR-based molecular marker technology-

1) RFLP
2) RAPD
3) SSR
4) VNTR

95. The smallest genome among the cereals is of-

1) Bread Wheat
2) Maize
3) Barley
4) Rice

96. Plastids (Chloroplasts) of autotrophic angiosperms carry important genetic information for plant life. Their plastome is polyploid and circular plasmid like, with size of-

1) 200 Kilo base pairs
2) 16 Kilo base pairs
3) 120-170 Kilo base pairs
4) 200- 2500 Kilo base pairs

97. Fluorescence in situ Hybridization (FISH) and Genomic in situ Hybridization (GISH) is for gene localization, genome analyses and mapping. GISH is different from FISH as-

1) A radio-isotope labeled gene is used as probe for hybridization to DNA

2) A segment of DNA/nucleotides labeled with fluorochrome(s) is used as probe(s) for localization of complementary DNA in the genome

3) Radioisotope-labeled total genomic DNA of any unknown plant species is used as probe to hybridize (target) chromosome DNA in situ

4) Entire labeled nuclear DNA (Genome) of a known plant species is used as probe in hybridization to chromosome DNA in situ

98. Method used to isolate, purify and enrich (concentrate) a specific protein from a mixture using a specific antibody immobilized on a solid support, is called as-

1) Immunoprecipitation

2) RNA-immunoprecipitation

3) Chromatin-immunoprecipitation

4) Protein complex-immunoprecipitation

99. Select incorrect statement-

1) Ti-Plasmid (180-205kb in size) is used as vector for gene transfer in plants. Direct repeats of 25 base pairs, the right border (RB) and left border (LB), are essential for T-DNA transfer

2) An elaborate mechanism for T-DNA transfer is encoded by a series of virulence (vir) genes (vir A, B, C, D, E, and G) on the Ti plasmid that map outside T-DNA.

3) These vir genes are inducible by chemical signals released by wounded plant cells

4) Vir A gene can be replaced with acetosyringone, a phenolic compound

100. Select correct statement-

1) Inheritance of plastidic (that carry plastomic gene) genes does not follow Mendel's laws

2) RNA editing and gene imprinting however, do not challenge Mendel's laws

3) Presence of Transposons/Casposons also do not challenge classical laws of genetics

4) Changes caused by methylation of DNA do not challenge Mendel's laws of inheritance.