

Objective Question Bank

Course No **GPB-243** Course Title- Principles of Seed Technology

1. Central seed testing laboratory is located at
 - a Bangalore
 - b Hyderabad
 - c New Delhi
 - d **Varanasi**
2. ISTA is located at
 - a New Delhi
 - b Munich
 - c Rome
 - d **Zurich**
3. Validity period of a certificates for seed is
 - a 6 month
 - b **9 month**
 - c 12 month
 - d 15 month
4. NSC was established in
 - a 1972
 - b 1971
 - c **1963**
 - d 1967
5. Seed certification standard for India is fixed by
 - a ISTA
 - b **Central Seed Certification Board**
 - c AOSSCA
 - d PPV and FRA
6. The crop with lowest seed multiplication ratio is
 - a Field pea
 - b Sesame
 - c **Coconut**
 - d Groundnut
7. The crop with highest seed multiplication ratio is
 - a Field pea
 - b **Sesame**
 - c Soybean
 - d Groundnut
8. A farmer has to purchase the seed to produce certified seed from
 - a Seed Certification Agency
 - b **Seed Corporation**
 - c University
 - d Market
9. At field level Breeder Seed Production programme is
 - a Certified by Field Inspector
 - b Certified by the Officer of the CSTL
 - c Certified by the committee constituted for the purpose
 - d **Monitored by the committee constituted for the purpose**
10. The colour of the tag of the seed of Wheat variety WH 147 purchased by the farmer to produce Certified seed II will be
 - a Yellow
 - b **Azure Blue**
 - c Green
 - d White

11. The number of tiers involved in seed multiplication in India is a
- | | | | |
|---|-------|---|------|
| a | One | b | Two |
| c | Three | d | Four |
12. The population formed by sowing of hybrid seed will be
- | | | | |
|---|---|---|---|
| a | Homogeneous population of homozygous plants | b | Homogeneous population of heterozygous plants |
| c | Heterogeneous population of homozygous plants | d | Heterogeneous population of heterozygous plants |
13. A farmer is producing the Certified seed of Wheat variety WH 147. During verification of the source of seed the colour of the tag should be
- | | | | |
|---|---------------|---|--------------|
| a | Golden Yellow | b | White |
| c | Azure Blue | d | Bottle Green |
14. The head quarter of PPV&FR is located at
- | | | | |
|---|-----------|---|-----------|
| a | Hyderabad | b | Banglore |
| c | Lucknow | d | New Delhi |
15. Name given to all the cultivated variants of plant varieties produced by breeding procedure after its notification is designated as
- | | | | |
|---|----------------|---|----------|
| a | Extant variety | b | Cultivar |
| c | Cultigen | d | EDV |
16. Any genera with only one known species that to under cultivation designated as a
- | | | | |
|---|----------|---|---------|
| a | Cultigen | b | Genera |
| c | Cultivar | d | Variety |
17. The colour of the tag of Foundation seed I is of
- | | | | |
|---|---------------|---|--------------|
| a | Golden Yellow | b | White |
| c | Azure Blue | d | Bottle Green |
18. A farmer has to purchase the seed for sowing purpose to produce Foundation seed from
- | | | | |
|---|---------------------------|---|------------------|
| a | Seed Certification Agency | b | Seed Corporation |
| c | University | d | Open Market |
19. The colour of the Breeder seed Tag is of
- | | | | |
|---|---------------|---|--------------|
| a | Golden Yellow | b | Off White |
| c | Azure Blue | d | Bottle Green |
20. The highest seed replacement rate is of
- | | | | |
|---|-------------|---|-------------|
| a | A Synthetic | b | A Composite |
| c | A hybrid | d | A variety |

21. Obtaining optimum population of healthy plants of the selected variety adopting normal recommended seed rate is termed as
- | | | | |
|---|--------------------|---|------------------------|
| a | Real value of seed | b | Planting value of seed |
| c | Seed aptitude | d | Genuine seed |
22. The seed yield from a unit area is governed by.
- | | | | |
|---|--|---|---|
| a | genetic potential of the variety and environmental condition | b | Optimum plant population of a potential variety |
| c | optimum plant population and environmental conditions | d | Genetic potential of the variety, optimum population of healthy plants and environmental conditions |
23. A plant grouping except micro-organism within a single botanical *taxon* of the lowest known rank, is known as
- | | | | |
|---|---------|---|-----------|
| a | Variety | b | Strain |
| c | Species | d | Land race |
24. The seed soled, based on the result of the laboratory established by the producer but not from a recognized lab is considered as
- | | | | |
|---|--------------------------|---|-------------------------|
| a | Privately Certified seed | b | Truthfully labeled seed |
| | Certified seed | c | |
| | | d | Denotified seed |
25. The class that does not represent seed multiplication chain in India
- | | |
|-------------------|------------------|
| A Nucleus seed | B Breeder seed |
| C Foundation seed | D Certified seed |
26. In United States mainly for autogamous crops the generation between Foundation and Certified seed is considered as
- | | |
|----------------------|----------------------------|
| A Foundation seed II | B Registered seed |
| C Certified seed I | D. Truthfully labeled seed |
27. Foundation and Certified seed production and procurement of Breeder, Foundation and Certified seed is the role of
- | | |
|------------------------------|---------------------|
| A. Seed Certification Agency | B. Seed Corporation |
| C. Agricultural University | D. ICAR |
28. Number of autonomous bodies involved in seed multiplication chain are
- | | |
|---------|----------|
| A. Two | B. Three |
| C. Four | D. Five |
29. Number of time seed may be multiplied from Breeder to Certified seed that is provided to farmer for production of food
- | | |
|---------|----------|
| A. Two | B. Three |
| C. Four | D. Any |

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Seed Biology

35. The colour of the hybrid seed of pigeonpea provided for commercial cultivation produced with the involvement of homozygous white (ww) female and homozygous brown male (WW) in case of incomplete dominance will be

a	Brown	b	White
c	Light brown	d	Brown with white strak

36. Based on hilum colour soybean varieties may be classified as brown and black. To work out the genetics, crosses were made between both the expressions. To determine the dominance the expression has to be observed on the seed of _____ generation.

a	F ₁	b	F ₂
c	F ₃	d	F ₄

37. All the haploid cells present in pollen tube have same genetic constitution because the last cell division to form the male gamete cells is

a	Meiosis	b	Mitosis
c	Unknown	d	Reduction

38. The number of haploid cells in pollen tube is

a	1	b	2
c	3	d	5

39. The path that has to be follow by pollen tube is directed by

a	First egg cell	b	Second egg cell
c	Generative cell	d	Tube nucleus

40. Reaching of pollen upto stigma is termed as

a	Anthesis	b	Pollination
c	Fertilization	d	Germination

41. The cotyledon of seed from family Graminenae is

a	Endosperm	b	Embryo
c	Scutellum	d	Coleoptile

42. The leguminous crop with well developed endosperm

a	Soybean	b	Rice bean
c	Fenugreek	d	Chickpea

43. The scar on seed shows the attachment of ovule with ovary is

a	Raphae	b	Hilum
c	Carauncle	d	Micropyle

44. Seed of all the designated oil seed crops germinate as
- | | | | |
|---|--------------|---|------------|
| a | Hypogeal | b | Epigeal |
| c | Hypo-epigeal | d | Viviparous |
45. Seed of sorghum and Niger has one similarity that both are
- | | | | |
|---|---------|---|-------|
| a | Seed | b | Fruit |
| c | Monocot | d | Dicot |
46. The part of embryo in dicot seed projecting out of cotyledon is
- | | | | |
|---|-----------|---|-----------|
| a | Plumule | b | Radicle |
| c | Coleptile | d | Endosperm |
47. A dicot seed germinates as epigeal due to fast growth in
- | | | | |
|---|-----------|---|-----------|
| a | Epicotyl | b | Hypocotyl |
| c | Mesocotyl | d | Cotyledon |
48. A viable seed not able to germinate because of unavailability of required environmental conditions is known as
- | | | | |
|---|--------------|---|-----------|
| a | Dead seed | b | Hard seed |
| c | Dormant seed | d | Quiescent |
49. A viable seed not able to germinate under favourable condition is known as
- | | | | |
|---|-----------|---|--------------------|
| a | Quiescent | b | Dormant |
| c | Dead | d | Fresh ungerminated |
50. Crop with liquid endosperm is
- | | | | |
|---|---------|---|----------------------|
| a | Rice | b | Buckwheat |
| c | Coconut | d | <i>Cajanus cajan</i> |
51. Dicot seed without cotyledon is
- | | | | |
|---|-----------------|---|-----------------|
| a | Fenugreek | b | Lettuce |
| c | Chickling vetch | d | <i>Cuscutta</i> |
52. Seed with endosperm and cotyledon both as store of food
- | | | | |
|---|-----------|---|-----------|
| a | Fenugreek | b | Lettuce |
| c | Castor | d | Faba bean |
53. Seed with endosperm, cotyledon and nucellus tissues as store of food
- | | | | |
|---|-----------|---|--------|
| a | Cucurbits | b | Beet |
| c | Tomato | d | Castor |
54. True seed of sugarcane is known as
- | | | | |
|---|--------|---|-------|
| a | Nut | b | Berry |
| c | Achene | d | Fuzz |

55. True seed of potato is formed in

- | | | | |
|---|-------------|---|-------|
| a | Pod | b | Tuber |
| c | Micro-tuber | d | Berry |

56. Crop of exalbuminous monocot seed with epigeal germination

- | | | | |
|---|-----------|---|--------|
| a | Castor | b | Potato |
| c | Sugarcane | d | Onion |

57. Ovule is attached with ovary by

- | | | | |
|---|-----------|---|-------------|
| a | Funiculus | b | Raphae |
| c | Chalaza | d | Pollen tube |

58. Scar of chalaza end is prominent in the seed of

- | | | | |
|---|-----------|---|----------|
| a | Pigeonpea | b | Chickpea |
| c | Mung pea | d | Lentil |

59. Out growth of integument present on the seed of castor is known as a

- | | | | |
|---|-----------|---|------------|
| | Endosperm | b | Strophiole |
| c | Carauncle | d | Coleorhiza |

60. In ex-albuminous seed the food material is absorbed in the cotyledon with the help of

- | | | | |
|---|-------------|---|----------------|
| a | Chalaza end | b | Micropylar end |
| c | Suspensor | d | Egg cell |

61. The radicle of cereals is covered by a protective sheath known as a

- | | | | |
|---|------------|---|------------|
| | Coleorhiza | b | Coleoptile |
| c | Scutellum | d | Mycorhiza |

62. The process of germination in which cotyledon(s) remains beneath the soil is known as

- | | | | |
|---|--------------|---|------------|
| a | Hyogeal | b | Epigeal |
| c | Hypo-epigeal | d | Viviparous |

63. The whitish scar present on the lateral side of the seed representing attachment of the seed to placenta is

- | | | | |
|---|-----------|---|-----------|
| a | Micropyle | b | Hilum |
| c | Raphae | d | Puckering |

64. Region of integumentary origin and attachment opposite to micropyle with prominent expression in chickpea

- | | | | |
|---|-----------|---|-------------|
| a | Micropyle | b | Chalaza end |
| c | Embryosac | d | Hilum |

65. Which of the following is not a living part of a seed
- | | | | |
|---|-----------|---|----------------|
| a | Cotyledon | b | Embryo |
| c | Endosperm | d | Aleurone layer |
66. Which of the following is a living part of a seed
- | | | | |
|---|-----------|---|--------|
| a | Cotyledon | b | Testa |
| c | Endosperm | d | Tegmen |
67. Endogenously controlled but environmentally imposed temporarily suspension of growth accompanied by reduced metabolic activity and relatively independent of ambient environmental conditions is known as
- | | | | |
|---|-----------|---|----------------|
| a | Dormancy | b | Quiescence |
| c | Dead seed | d | Non germinable |
68. Single seeded fruit with fused seed coat and fruit wall is known as
- | | | | |
|---|------------|---|-----------|
| a | Achene | b | Caryopsis |
| c | Schizocarp | d | Berry |
69. Single seeded fruit without fused seed coat and fruit wall used as seed is a
- | | | | |
|---|------------|---|-----------|
| a | Achene | b | Caryopsis |
| c | Schizocarp | d | Berry |
70. Outgrowth of the hilum region which restricts water movement into and out of some seeds is known as
- | | | | |
|---|-----------|---|------------|
| a | Raphe | b | Strophiole |
| c | Carauncle | d | Coleorhiza |
71. Sort out the odd crop among chickpea, mung bean, field pea and lentil based on germination
- | | | | |
|---|-----------|---|-----------|
| a | Chickpea | b | Mung bean |
| c | Field pea | d | Lentil |
72. One similarity among mung bean, sunflower, soybean and cotton is
- | | | | |
|---|---------------------|---|----------------|
| a | Self pollinated | b | Oil seed crops |
| c | Epigeal germination | d | Pulse crops |
73. Formation of true seed without fertilization is known as
- | | | | |
|---|---------------------|---|-----------------|
| a | Parthenocary | b | Parthenogenesis |
| c | sexual reproduction | d | Apomixis |
74. The chromosome number of cotyledon and endosperm is
- | | | | |
|---|-----------|---|-----------|
| a | 2n | b | 3n |
| c | 2n and 3n | d | 3n and 2n |

75. The apical cell divides mitotically and forms a globular structure of _____ diploid cells.

- | | | | |
|---|---|---|----|
| a | 5 | b | 10 |
| c | 8 | d | 16 |

76. Formation of embryo from egg cell and endosperm from polar nuclei after fertilization are considered as

- | | | | |
|---|-------------------------|---|-----------------------|
| a | Genetic-differentiation | b | Cyto- differentiation |
| c | Myco-differentiation | d | histo-differentiation |

77. Number of archisporium cell in an embryo sac is

- | | | | |
|---|---|---|---|
| a | 8 | b | 6 |
| c | 3 | d | 2 |

78. The genetic constitution and chromosome number of embryo and cotyledon is a

- | | | | |
|---|--------------------|---|-------------------------|
| a | same | b | Different and different |
| c | Different and same | d | Same and different |

79. The development of monocot and dicot seed is same upto

- | | | | |
|---|-----------------|---|----------------|
| a | Porembryo stage | b | Globular stage |
| c | Scutellar stage | d | Torpedo stage |

80. Embryo is formed by fertilization between

- | | | | |
|---|---------------------------|---|--------------------------------|
| a | Egg cell + sperm cell | b | Egg cell + both the sperm cell |
| c | Pollar nuclei+ sperm cell | d | Pollar nuclei + egg cell |

81. In embryo sac, archisporium haploid cells are arranged in the fashion of a

- | | |
|---|-------|
| a | 1+2+1 |
| b | 3+3+3 |
| c | 3+2+3 |
| d | 2+2+2 |

82. Cotyledon is the growth of the cell formed by

- | | | | |
|---|----------------------------|---|-----------------------|
| a | Pollar nuclei + sperm cell | b | Egg cell + sperm cell |
| c | Egg cell+ synergids | d | Synergids+ sperm cell |

83. At physiological maturity _____ layer is formed at the connection of ovule with ovary

- | | | | |
|---|------------------|---|-------------|
| a | Hard layer | b | Lime layer |
| c | Abscission layer | d | Glass layer |

84. Seed coat is made up of

- | | | | |
|---|-------------------------|---|-------------------------|
| a | Diploid maternal tissue | b | Haploid maternal tissue |
| c | Diploid hybrid tissue | d | Diploid paternal tissue |

85. Outgrowth of funiculus, raphe, or integuments; or fleshy integuments or seed coat, a sarco-testa
- | | | | |
|---|------------|---|------------|
| a | Operculum | b | Strophiole |
| c | Elaiosomes | d | Aril |
86. Hybrid and selfed seed of _____ crop can be distinguished at seed level with visual observation
- | | | | |
|---|-------|---|-----------|
| a | Rice | b | Sunflower |
| c | Maize | d | Pigeonpea |
87. Hybrid seed produced by making cross between female of yellow (gg) cotyledon colour with the male of green (GG) cotyledon colour. The colour of the cotyledon of a hybrid seed given to farmer when G is completely dominant over g will be
- | | | | |
|---|------------|---|-------------|
| a | Green | b | Yellow |
| c | Dark green | d | Light green |
88. The contribution of female in endosperm with genetic constitution of YYy is a YY
- | | |
|------|-------|
| b | Yy |
| c yy | d YYy |
89. The ploidy level of endosperm is
- | | | | |
|---|----|---|----|
| a | 3n | b | 2n |
| c | 4n | d | n |
90. A chemical which inhibit and promote seed germination and considered as hormone:
- | | | | |
|---|-------------|---|-----------|
| a | Gibberellin | b | Cytokinin |
| c | Ethylene | d | Phylin |
91. Inner coat of seed is called
- | | | | |
|---|--------|---|-------|
| a | Tegmen | b | Testa |
| c | Intine | d | Exine |
92. Theoretical number of Micro and Mega spore required to produce 100 Rice grain is
- | | | | |
|---|-------------|---|------------|
| a | 25 and 100 | b | 100 and 25 |
| c | 100 and 100 | d | 50 and 50 |
93. All the seeds formed in a fruit of brinjal require -----of pollen
- | | | | |
|---|-----------------------------|---|------------------------|
| a | One pollen | b | Equal number of pollen |
| c | One fourth number of pollen | d | Half number of pollen |
94. Coat of rice seed is
- | | | | |
|---|-----------------|---|------------------|
| a | Lemma and palea | b | Testa and Tegmen |
| c | Fruit wall | d | Husk |

95. In case of apomictic plants, the inbreeding depression is
- | | | | |
|---|-----------|---|------|
| a | very high | b | high |
| c | Low | d | zero |
96. In a dormant seed the ratio of growth promoter or growth retardant is a 1
- | | |
|---|----|
| b | 0 |
| c | <1 |
| d | >1 |
97. Most potential dormancy inducer is
- | | | | |
|---|----------|---|-------------|
| a | Ethylene | b | ABA |
| c | Coumarin | d | scopoletins |
98. The photosynthetically functional cotyledon during germination is seen in
- | | | | |
|---|-----------|---|----------|
| a | Field pea | b | Lentil |
| c | Soybean | d | Chickpea |
99. The part of coconut used as food is
- | | | | |
|---|----------|---|-----------|
| a | Mesocarp | b | Endosperm |
| c | Endocarp | d | Cotyledon |
100. Germination of mature seed before harvesting on plant is termed as
- | | | | |
|---|-----------------------|---|------------------------|
| a | Vivipary | b | Post harvest sprouting |
| | Pre harvest sprouting | d | Quiescence |
101. Hypogeal germination occurs in
- | | | | |
|---|-----------|---|-----------|
| a | Field pea | b | soybean |
| c | Niger | d | Mung bean |
102. Epigeal germination occurs in
- | | | | |
|---|-----------|---|-----------|
| a | Field pea | b | Chickpea |
| c | Lentil | d | Mung bean |
103. Seeds of all the oilseed field crops germinates as
- | | | | |
|---|---------------|---|--------------------------|
| a | Hypogeal | b | Epigeal |
| c | Epi-hypo geal | d | May germinate in any way |
104. A dry fruit, which is separated into two or more units at maturity, e.g. coriander, carrot etc.
- | | | | |
|---|------------|---|----------|
| a | Schizocarp | b | Mezocarp |
| c | Endocarp | d | Achene |
105. The hormone that permits the embryo for passing directly for embryogenesis to germination while still present on the parent plant
- | | | | |
|---|-----|---|-----------|
| a | IAA | b | ABA |
| c | GA3 | d | Cytokinin |

106. Which of the following hormone is not synthesized in the developing seed
- | | | | |
|---|-----------|---|-------|
| a | Gibberlin | b | Auxin |
| c | Cytokinin | d | ABA |
107. The major Auxin in developing seed is
- | | | | |
|---|-----|---|--------|
| a | IAA | b | ABA |
| c | NAA | d | Zeatin |
108. At cell division and elongation in embryo and endosperm _____ hormone remain present at its highest concentration
- | | | | |
|---|-----------|---|-------|
| a | Gibberlin | b | Auxin |
| c | Cytokinin | d | ABA |
109. For germination of seed which of the following hormone should be present at low concentration
- | | | | |
|---|-----------|---|-------|
| a | Gibberlin | b | Auxin |
| c | Cytokinin | d | ABA |
110. Acquisition or acceleration of the ability to flower by chilling treatment is known as
- | | | | |
|---|---------------|---|---------------|
| a | Articulation | b | Bolting |
| c | Verbalization | d | Vernalization |
111. The sugar is Tran located from source to sink (seed) of monoct in the form of
- | | | | |
|---|-----------|---|------------|
| a | Raffinose | b | Verbascose |
| c | Stachyose | d | Sucrose |
112. In maize assimilates are unloaded from the phloem terminals for accumulation in the endosperm at
- | | | | |
|---|----------|---|-----------|
| a | Funilcle | b | Peduncle |
| c | Pedicel | d | Micropyle |
113. In genral the assimilates reaches from maternal tissue to store of seed by a
- | | | | |
|---|-----------|---|----------------|
| | Osmosis | b | Symplastically |
| c | Diffusion | d | Phloem bundles |
114. Embryosac and integument have
- | | | | |
|---|------------------------------|---|-----------------------------|
| a | Symplasitc connection | b | No symplastic connection |
| c | Connection of phloem strands | d | Connection of xylem strands |
115. Carbon is translocated into the seed mainly in the form of
- | | | | |
|---|------------|---|---------|
| a | Fat | b | Protein |
| c | Amino acid | d | Sucrose |

116. Nitrogen is translocated into the seed mainly in the form of

- | | | | |
|---|------------|---|---------|
| a | Fat | b | Protein |
| c | Amino acid | d | Sucrose |

117. Reduce amylopectin content in the cotyledon of *Pisum sativum* is responsible for

- | | | | |
|------------|--------------------|---|------------------|
| a | Smooth seed coat | b | Green cotyledon |
| 118. The c | Wrinkled seed coat | d | Yellow cotyledon |

form of amino acid translocated from the parent plant is

- | | | | |
|---|-----------------------|---|------------------------|
| a | Keto containing group | b | Amide containing group |
| c | Hydroxyl group | d | Aldehyde group |

119. In a normal seed the 'switch' from a developmental to germinative mode is elicited by

- | | | | |
|---|------------------|---|-------------------------|
| a | Maturation event | b | Hydration event |
| c | Bursting event | d | Maturation drying event |

Seed Porcessing

120. Top most screen with larger holes than the desirable seed size to remove the inert matter of larger size is known as
- | | | | |
|---|-----------|---|---------|
| a | Grader | b | Scalper |
| c | Aspirator | d | Huller |
121. In public sector seed processing plants belongs to.
- | | | | |
|---|------------------|---|---------------------------|
| a | Seed Corporation | b | Seed certification agency |
| | Private agency | d | Farmer |
122. A specified quantity of processed seed of a variety and class produced by a grower is known as
- | | | | |
|---|----------------|---|----------------|
| a | Certified seed | b | Processed seed |
| c | Farmers seed | d | Seed lot |
123. Improvement in physical purity of seed lot by removal of undesirable material and upgrading of seed quality through removal of damaged and undersized seed by mechanical devices with highest efficiency including minimum loss and damage to seed is known as
- | | | | |
|---|-------------------|---|-------------------|
| a | Seed processing | b | Seed treatment |
| c | Seed halogenation | d | Seed invigoration |
124. Pre conditioning, basic cleaning and grading are the major steps of
- | | | | |
|---|----------------|---|-----------------|
| a | Grading | b | Seed processing |
| c | Seed treatment | d | Quality control |
125. The operation that prepares a seed lot for basic cleaning.
- | | | | |
|---|------------------|---|------------|
| a | Pre cleaning | b | Grading |
| c | Pre conditioning | d | Pre taming |
126. Equipments used for removal of corn seeds from its cob
- | | | | |
|---|-----------|---|-----------|
| a | Debearder | b | Sheller |
| c | Huller | d | Scarifier |
127. The equipment removes tightly fixed husk from seeds of grasses to facilitate in the process of sowing and germination
- | | | | |
|---|-----------|---|-----------|
| a | Debearder | b | Sheller |
| c | Huller | d | Scarifier |
128. The equipment scratches the hard seed coat to improve the process of germination by increasing exchange of water and oxygen in crops like lucerne, fababean, rice bean etc.
- | | | | |
|---|-----------|---|------------|
| a | Scarifier | b | Stratifier |
| c | Scalper | d | Sheller |

129. The thumb rules for seed storage have been developed by
- | | | | |
|---|--------------|---|-----------------|
| a | E.H. Roberts | b | H.F. Harrington |
| c | Douglos | d | Thompson |
130. Huller, Sheller, Debearder, decoaticator are the equipment of seed processing involved in —
- | | | | |
|---|------------------|---|----------|
| a | Basic cleaning | b | Grading |
| c | Pre conditioning | d | Cleaning |
131. A vital link between production and marketing of seeds
- | | | | |
|---|------------|---|-----------|
| a | Tanning | b | Numbering |
| c | Processing | d | Colouring |
132. Seed of groundnut is stored as
- | | | | |
|---|---------------|---|--------|
| a | Nut | b | Kernel |
| c | Dehulled seed | d | Seed |
133. The step of seed processing that removes the larger, smaller, lighter and thicker adulterants as compared to the crop seed, from the seed lot is known as _____.
- | | | | |
|---|------------------|---|----------------|
| a | Pre conditioning | b | Basic cleaning |
| c | Grading | d | Separation |
134. Top most screen of a seed cleaner/ grader with larger hole than the desirable seed size to remove the inert matter of larger size than the seed is known as
- | | | | |
|---|-----------|---|-----------|
| a | Grader | b | Scalper |
| c | Aspirator | d | Debearder |
135. The separator that separates the inert matter, other crop seeds, weed seeds and shrivelled seeds from healthy leguminous seeds using the ability of a seed to roll due to its shape is known as
- | | | | |
|---|--------|---|---------|
| a | Indent | b | Gravity |
| c | Spiral | d | Disc |
136. The revolving separator that provides each seed a chance to fit into the indent by turning out the seed mass is known as
- | | | | |
|---|------------------------------|---|-------------------|
| a | Indent cylindrical separator | b | Gravity separator |
| c | Spiral separator | d | Disc separator |
137. A separator consists of a stratifying deck surface mounted at a slight angle that reciprocates and tosses heavy seed in uphill direction, whereas, light material remains at down hill place is known as
- | | | | |
|---|------------------------------|---|-------------------|
| a | Indent cylindrical separator | b | Gravity separator |
| c | Spiral separator | d | Disc separator |

138. Lighter inert matter and adulterant than the crop seed is removed from the seed lot by the process of _____.

- | | | | |
|---|-----------------|---|------------|
| a | Preconditioning | b | Hulling |
| c | Dehulling | d | Aspiration |

139. Moisture content of the seed by the hot air oven method is given by

- | | | | |
|---|--|---|--|
| a | $(\text{Initial wt} - \text{final wt}) / \text{Final wt} \times 100$ | b | $(\text{Final wt} - \text{initial wt}) / \text{Initial wt} \times 100$ |
| c | $\text{Wet wt} / \text{Dry wt} \times 100$ | d | Wet weight-Dry weight |

140. The mesh size of a screen is presented as

- | | | | |
|---|-----------|---|-----------|
| a | N/4 inch | b | N/8 inch |
| c | N/16 inch | d | N/64 inch |

141. The shape of the mesh of top screen is generally

- | | | | |
|---|------------|---|-----------|
| a | Oblong | b | Round |
| c | Triangular | d | Wire mesh |

142. The total of relative humidity in percent and temperature in Fahrenheit should not exceed _ for safe storage of seed.

- | | | | |
|---|-----|---|-----|
| a | 50 | b | 70 |
| c | 100 | d | 120 |

143. Separation based on seed weight is done with the help of

- | | | | |
|---|------------------|---|-------------------|
| a | Aspirator | b | Gravity separator |
| c | Spiral separator | d | Disc separator |

144. Separation based on seed shape is done with the help of

- | | | | |
|---|------------------|---|-------------------|
| a | Aspirator | b | Gravity separator |
| c | Spiral separator | d | Disc separator |

145. Separation based on seed surface texture is done with the help of a

- | | | | |
|---|------------------|---|-------------------|
| a | Aspirator | b | Gravity separator |
| c | Spiral separator | d | Disc separator |

146. Separation based on seed surface texture is done with the help of

- | | | | |
|---|------------------------------|---|-------------------|
| a | Indent cylindrical separator | b | Gravity separator |
| c | Spiral separator | d | Disc separator |

147. In general, separation based on seed colour is done with the help of

- | | | | |
|---|------------------------------|---|-------------------|
| a | Indent cylindrical separator | b | Gravity separator |
| c | Spiral separator | d | Hand picking |

148. Exposure of imbibed seeds to higher/lower temperatures for a prescribed period of time to overcome mechanical or morphological dormancy is known as
- | | | | |
|---|---------------|---|-----------------------|
| a | Scarification | b | Stratification |
| c | Scalping | d | Priming |
149. Process of enriching the seeds with bioactive chemicals is known as a
- | | | | |
|---|----------------------|---|----------------|
| | Fortification | b | Stratification |
| c | Halogenation | d | Priming |
150. Soaking of seeds in organic solvents to improve the germination and vigour of the seed by infusion of bioactive chemicals into the seed without altering seed moisture content is known as
- | | | | |
|---|---------------|---|-------------------|
| a | Fortification | b | Permeation |
| c | Halogenation | d | Priming |
151. Hydration of the seed to initiate the pre-germinative metabolism followed by dehydration to fix the biochemical events is known as seed
- | | | | |
|---|---------------|---|------------------|
| a | Fortification | b | Hardening |
| c | infusion | d | Dressing |
152. Controlled hydration of seeds through a carrier or a high molecular solute to a level that starts pre-germinative metabolic activity followed by dehydration to check emergence of the radicle is known as seed
- | | | | |
|---|---------------|---|----------------|
| a | Fortification | b | Hardening |
| c | infusion | d | Priming |
153. Soaking of seeds in salt solutions is known as
- | | | | |
|---|---------------------|---|----------------------|
| a | Osmo-priming | b | Bio-priming |
| c | Halo-priming | d | Solid matrix priming |
154. Seed coating with biological agents like Rhizobium
- | | | | |
|---|--------------|---|----------------------|
| a | Osmo-priming | b | Bio-priming |
| c | Halo-priming | d | Solid matrix priming |
155. Enclosing or encapsulation of the small seed with a small quantity of inert (foreign) material to produce a globular unit of standard size is known as
- | | | | |
|---|-----------------------|---|--------------------|
| a | Seed priming | b | Seed hardening |
| c | Seed pelleting | d | Seed Fortification |
156. Coating of seed with all the possible useful active ingredients (insecticide + fungicide + micronutrients + colouring agents + etc) with an adhesive is known as
- | | | | |
|---|----------------------|---|---------------|
| a | Hard seed | b | Prime seed |
| c | Designer seed | d | Pelleted seed |

157. To check mesomechochory in sesame the seed is dressed with

- | | | | |
|---|------------|---|--------------|
| a | Fungicide | b | Bacteriacide |
| c | Nematacide | d | Insecticide |

158. Seed feeder that obtains water metabolically from seeds and releases it into their immediate environment along with waste heat are

- | | | | |
|---|-------------------------|---|---------------------------|
| a | The primary seed feeder | b | The secondary seed feeder |
| c | Internal seed feeder | d | All |

159. *Callosobruchus spp* is very serious insect pest of

- | | | | |
|---|---------|---|-------------------------------|
| a | Pulses | b | Vegetatively propagated crops |
| c | Cereals | d | Oil seed crops |

Seed storage

160. Seeds that may withstand dehydration without damage are considered as. a Dormant seed
b Recalcitrant seed
c orthodox seed
d Hard seed
161. The two greatest enemies of storage life of seeds are
a high moisture and high temperature
b High light intensity and high temperature
c Low light intensity and high moisture
d Low oxygen and high moisture
162. Cryopreservation means storage (conserving) of materials at
a Very high temperature
b Liquid nitrogen temperature
c low temperature
d room temperature
163. Storage or conservation of materials at -196 degrees Celsius is called as a Cold storage
b Medium term storage
c Cryopreservation
d Short term storage
164. Optimal storage condition is
a airtight, low humidity, and low temperature
b Free air flow, low humidity, and low temperature
c airtight, High humidity, and low temperature
d airtight, low humidity, and high temperature
165. An improvement in seed performance by any post harvest physio-chemical treatment resulting in better storability, improved germination and field performance over a wide range of edapho-climatic conditions than the corresponding untreated seed is considered as
a Seed pelleting
b Seed pelleting
c seed invigoration
d Seed ageing
166. Elements of Group XVII of periodic table are known as a Hydrogen
b Nitrogen
c Helium
d Halogen
167. Replacement of one _____ atom with halogen is known as halogenation
a Carbon
b Nitrogen
c Oxygen
d Hydrogen
168. The halogen is absorbed by of the seed and reduces the physiological deterioration
a Protein
b Carbohydrate
c Unsaturated fatty acid
d Saturated fatty acid

169. The Halogen protect seed during storage due to ___property a
Antimicrobial b Fumigation
 c Repellent d Attractant
170. All the stored insect pests belong to the order
 a **Coleopetra, Lepidoptera, Hymenoptera** b Lepidoptera , Diptera and Odonata c
 Coleopetra, Diptera, Odonata d Hymenoptera, Diptera, Odonata
171. Important store grain pests are from the class
 A Chordeta b Reptilia
 c **Insecta and Acarira** d Only Acarira
172. Cigarette beetle, confused flour beetle, Indian meal, red flour beetle and saw toothed beetle are_
 _feeder
 a **External feeder** b Internal feeder
 c External and internal feeder d These are not store grainpest
173. _____Live on the seeds already damaged by other insects in store. a **Mites**
 b Snail
 c Nematodes d Rat
174. Exposure of seeds to gaseous form of harmful chemicals to control seed borne fungi and insects
 to control deterioration of seed during storage is known as
 a Halogenation b **Fumigation**
 c Invigoration d Pelleting
175. Seed sample of _____-with more than the 1% insect infestation are rejected a Oil
 seed b **Legume and maize**
 c Vegetable d Cereals
176. In Oil seed crops maximum permitted insect infestation during storage is a 0.1%
 b **0.5%**
 c 1% d Nil
177. Objectionable insect pest of sweet potato
 a Scale insect b Scale and mealy bug
 c **Wireworm and weevil** d Bruchus
178. Scale insect is the objectionable pest of
 a Okra b Sugarcane
 c **Colocassia** d Potato
179. Seed of wheat reduced to husk indicates infestation of
 a Red flour, beetle b Saw toothed beetle
 c **khapra beetle** d Flat grain beetle

Seed health

180. A variety used by farmer was resistant to YMV of soybean but in the current year the symptoms of disease appeared on the plants. It shows deterioration of _____
- a Seed b Variety
- c Crop d Soil
181. Diaphanoscope is used to test the
- a Physical purity b Genetic purity
- c Moisture content d Seed viability
182. At seed level _____ disease is objectionable both in sorghum and pearl millet.
- a Head smut b Grain smut
- c Downy mildew d Ergot
183. Seed of pearl millet from fields having ergot infection even within the prescribed limits should be subjected to floatation treatment in _____ to become eligible for certification.
- a Water b Brine solution
- c Brawn solution d Brown solution
184. The seed certification standard of Karnal bunt for foundation class is 0.05%. It means one has to observe minimum _____ seeds
- a 100 b 1000
- c 10000 d 100000
185. In India *Orobanche cumna* is a designated objectionable parasitic weed of
- a Safflower b Sugarcane
- c Soybean d Sunflower
186. In India *Cuscutta* spp is a designated objectionable parasitic weed of
- a Egyptin clover b Lucerne
- c Oat d Niger
187. Seed sample of maize and pulses with insect infestation more than _____ are rejected during certification
- O.1% 0.5%
- 1.0% 10%
188. Seed sample other than maize and pulses with insect infestation more than _____ are rejected during certification.
- A. 0.1% B. 0.5%
- C. 1.0% D. 10%

189. To avoid transmission of loose smut in barley, wheat, oat and triticale _____m isolation distance should be maintained in Certified seed production programme.
- A. 50m B. 100m
C. 150m D. 200m
190. Top borer, Internode borer, Stalk borer, *Plassey* borer, *Gurdaspur* borer, Scale insect, Mealy bug are the objectionable insect pest of
- A. Maize B. Sorghum
C. Pearl millet D. Sugarcane
191. The field infected by brown rot, wart or nematode should not be selected for seed production of
- A. Potato tubers B. Sugarcane
C. Onion D. Soybean
192. Halo blight is the objectionable seed borne disease of
- A. Mung bean B. Rajmash
C. Soybean D. Urid bean
193. Cercospora leaf spot is the objectionable seed borne disease of
- A. Niger B. Sesame
C. Linseed D. Groundnut
194. The disease objectionable both for sunflower and pearl millet at field level is Halo blight
Head smut
Cercospora leaf spot Downy mildew
195. objectionable disease of pearl millet both at seed and field level is
- A. Ergot B. Downymildew
C. Head smut D. Grainsmut
196. Common objectionable disease of wheat, triticale, oat and barley at field level is
- A. False smut B. Yellow Rust
C. Loose smut D. Blackrust
197. The objectionable pest in seed production of chickpea in India is
- A. Fusarium wilt B. Rhizoctonia root rot
C. Helicoverpa D. None
198. Seed fields that can be reinspected
- A. Sorghum infected by grain and head smut B. Sorghum infected by ergot
C. Pearl millet infected by downy mildew D. Wheat infected with Loose smut

209. Downey mildew is an objectionable seed borne disease of

- A. Sunflower
- B. Pearl millet
- C. Both A and B
- D. Field pea

210. The soil may become sick with the continuous use of seed infected with _____ disease for sowing purpose

- A. Loose smut of wheat and Cercospora leaf spot of sesame
- C. Rice bunt and head smut of sorghum
- B. Karnal bunt of wheat and downy mildew of sunflower
- D. Downey mildew of pearl millet and Halo blight of mung

Seed production

211. ----- is maintained by avoiding Out crossing and mixture of seeds of other varieties in the produced seed lot.
- A. Physical
B. Genetic
C. Health
D. Germinability
212. The purity of the seed that is improved by rouging is
- A. Physical purity
B. Genetic purity
C. Ethic purity
D. Expressed purity
213. Genetic impurity in pigeonpea due to out crossing can be sorted out by
- A. ODV test
B. GOT test
C. Both ODV and GOT
D. DUS test
214. Seed plot is grown at a particular distance from the sources of genetic contamination to avoid
- A. Self pollination
B. Out crossing
C. Goitenogamy
D. Crosspollination
215. Sorghum, pigeonpea, cotton, linseed, sesame require more isolation distance during seed production as these crops have _____ type of pollination.
- Self pollinated
Cross pollinated
Often self pollinated
Often cross pollinated
216. Exposure of male and female part of flower due to pressure of insect during nectar or pollen collection is known as _____
- A. Bursting
B. Anthesis
C. Tripping
D. Hammering
217. The pollen grains are tested for viability by using _____ solution.
- A. 2% aceto-carmin
B. Iodine solution
C. Agar agar
D. Commusiveblue
218. The act of removing the plants of the same species, which is deviating from the normal expression of the variety in a seed production plot is designated as
- A. Weeding
B. Rouging
C. Offtype removal
D. Cropping
219. Selective removal of undesirable plants of the seed crop on the basis of visual inspection in the field to improve quality of seed is known as _____.
- A. Weeding
B. Rouging
C. Offtype removal
D. Cropping

220. An isolation distance of three meter is recommended in many self pollinated crops to check _
—
- A. Out crossing
B. Cross pollination
C. Infection of disease
D. Mechanical mixture
221. In determination of isolation distance tester means population with _____ alleles of the genes for marker character.
- A. Dominant
B. Recessive
C. Additive
D. Epistite
222. Careful and systematic evaluation of a seed production field and the removal of all undesirable plants of the same crop is known as _____.
- A. Weeding
B. Rouging
C. Offtype removal
D. Cropping
223. Removal of plant of wheat infested by loose smut from the seed production plot of wheat is known as _____.
- A. Weeding
B. Rouging
C. Offtype removal
D. Cropping
224. Isoation and rouging are the major field operations of seed production that differs from commercial cultivation to maintain
- A. Genetic purity and seed health
B. Physical purity and germination
C. Out crossing and vigour
D. Uniformity and stability
225. In a seed production plot, plant similar for distinguishing character(s) but deviates in the agronomical trait(s) like, days to flowering, plant height, disease reaction and days to maturity is designated as .
- A. Rogue
B. Offtype
C. Volunteer plant
D. ODV
226. A plant in the seed crop, which deviates from the norm for the cultivar, but does not obviously belong to another cultivar
- A. Rogue
B. Offtype
C. Volunteer plant
D. ODV
227. Plant showing variation in expression of distinguishing characters or abnormal performance of the plant in comparison to normal expression of the cultivar i.e., plant of other cultivar, other species or diseased plant of the same cultivar is considered as
- A. Rogue
B. Offtype
C. Volunteer plant
D. ODV

228. Knowledge of _____ of the variety in seed production is the pre-requisite for the persons engaged in rouging.
- A. **Diagnostic and phenological traits** B. Qualitative and quantitative traits
C. Expression against biotic stresses D. Polygenic and oligogenic traits
229. Theoretically rouging should be performed
- A. **Before flowering** B. After flowering
C. At the time of flowering D. At the time of maturity
230. Testing of genetic purity at seed level is known as _____ test **A.**
- ODV** B. GOT
C. DUS D. VCU
231. Testing of genetic purity at plant level is known as
- A. ODV **B. GOT**
C. DUS D. VCU
232. Plants of the same crop grown in the field due to shattered seeds of previous season crop/variety alongwith the present season crop is known as
- A. Assistant plant B. Pollen shedder
C. Volunteer plant D. Weed
233. Undesirable natural Out crossing has
- A. **No effect on morphology of the produced seed** B. Significant alteration on morphology of produced seed
C. Seed will be of larger seed size D. Seed will be or darker in colour
234. Deterioration of a variety when the proportion of different states of unnoticed traits may reach equilibrium by natural selection and express in new environment is known as
- A. Genetic drift B. **Residual Segregation**
C. Genetic shift D. Natural selection
235. Cause of variation during seed multiplication that can not be controlled by seed producer is
- A. Out crossing B. **Mutation**
C. Residual segregation D. Recombination

Seed law enforcement

236. Prof _____ visited India in the year 1961, emphasized on controlling the quality of seeds by certifying them and enacting seed law.
- A. **A.S. Carter**
 - B. K. Dorph Peterson
 - C. L.O. Copeland
 - D. O.L. Justice
237. Minimum Seed certification were determined in the year _____
- A. 1966
 - B. **1971**
 - C. 1975
 - D. 1989
238. _____ advises the Central Government and the State Governments on matter arising out of the administration of the Seed Act.
- a) **Central Seed committee**
 - b) State seed Committee
 - c) University
 - d) ICAR
239. The method to be adopted for seed testing is finalized by
- a) Central Seed Testing Lab
 - b) Directorate of Seed Research
 - c) **International Seed Testing Association**
 - d) National Seed Testing Association
240. The seed rules were passed in the year _____
- A. 1963
 - B. 1966
 - C. **1968**
 - D. 1971
241. The procedure to be followed by Seed inspector for inspection of seed is described in the book entitled _____
- A hand book of seed inspector** Seed
 - Testing manual
 - Seed Technology
 - Seed Certification manual
242. The _____ takes sample of the notified variety being sent for testing in Seed Testing laboratory
- A. **Seed inspector of seed certification agency**
 - B. Officer of seed corporation
 - C. Engineer of processing plant
 - D. Representative of the University

243. By the Seed (control) order, the seed was included in _____ commodities.
a) **Essential**
b) Non essential
c) Food
d) Volatile
244. In public sector quality of seed is the responsibility of
A. Seed Corporation
B. **Seed Certification Agency**
C. Seed seller
D. Farmer
245. National Seed Policy was framed in the year _____
A. 1966
B. 1983
C. **2002**
D. 2006
246. One or more related species or sub-species of crop plants each individually or collectively known by one common name is termed as _____ in seed act 1966.
A. Kind
B. Brand
C. **Variety**
D. Type
247. The seed testing laboratory to which the sample has been submitted for analysis shall submit the report of analysis to the Seed Inspector with in _____ days of receipt of the sample.
A. 30 days
B. 45 days
C. **60 days**
D. 90 days
248. As per Seed Act 1966 the person who contravenes the functioning of Seed Inspector from exercising powers may fine upto rupees _____ for the first offense.
a. **Rs 500**
b. **Rs 1000**
c. Rs. 5000
d. Rs. 10000
249. For production of foundation seed, the sowing will be of _____ class seed.
a. Nucleus seed
b. **Breeder seed**
c. Foundation seed
d. Certified seed

250. Production of the Breeder seed is the responsibility of A State Government
 B. National Seed Corporation
 C. Central Seed Testing Board
 D. Division of Seed, Ministry of Agriculture, Government of India
251. Availability of Foundation seed for production of Certified seed is the responsibility of
 A. State Government
 B. ICAR
 C. Central Seed Testing Board
 D. Division of Seed, Ministry of Agriculture, Government of India
252. Number of generation allowed after Breeder seed in seed multiplication chain is
 A 2
 B 3
 C 4
 D 5
253. Production of Foundation and Certified seed is the responsibility of
 A. Seed Certification Agency
 B. Seed Testing Laboratory
 C. Seed Corporation
 D. ICAR
254. On the tag of the Breeder Seed Signature is of
 a. Seed certification inspector
 b. Seed Analyst
 c. Seed Certification Officer
 d. Consult Plant Breeder
255. A farmer interested in Certified seed production has to get registered with
 A. Seed Corporation
 B. Seed Certification Agency
 C. University
 D. State Department of Agriculture
256. In March 2002 the first transgenic hybrid of _____ was allowed for commercial cultivation in farmer's field in India .
 a. Maize
 b. Pearl millet
 c. Cotton
 d. Tomato

257. India became member of ISTA in the year _____
1. 1961
2. 1963
3. 1966
4. 1971
258. The Essential Commodities Act, was enacted in the year
A. 1950
B. 1955
C. 1960
D. 1968
259. Seeds Control Order under the Essential Commodities Act, 1955 was enacted in the year.
A. 1981
B. 1983
C. 1987
D. 1988
260. Consumer Protection Act was enacted in the year A. 1984
B. 1986
C. 1988
D. 2000
261. Environment Protection Act, with its 1989 Rules pertaining to Genetically Modified Organisms was enacted in the year
A. 1986
B. 1989
C. 2002
D. 2006
262. New Policy on Seed Development was enacted in the year A. 1985
B. 1988
C. 1998
D. 2008
263. The Biological Diversity Act, was enacted in the year A. 1992
B. 1998
C. 2000
D. 2002

264. The Plants, Fruits and Seeds (Regulation of Import into India) Order, was enacted in the year
 A. 1987
 B. 1989
 C. 1999
 D. 2005
265. Industrial Policy was enacted in the year A.
 1961
 B. 1991
 C. 1971
 D. 1981
266. Geographical Indication of Goods Act, was enacted in the year A. 1979
 B. 1989
 C. 1999
 D. 2009
267. Protection of Plant Varieties and Farmers' Rights Act, was enacted in the year
 1. 1999
 2. 2000
 3. 2001
 4. 2005
268. National Seed Policy was enacted in the year
 A. 1966
 B. 1968
 C. 1998
 D. 2002
269. The Government of India enacted the _____ in 1966 to regulate the seed industry.
 a) Seed bill b) Seed act
 c) Seed regulation
 d) Seed law
270. The act provided a system for seed quality control through independent State Agency
 a) Seed production b) Seed certification
 c) Seed corporation
 d) Department of Agriculture

271. In 1991 under Industrial Policy seed production was identified as a
- High priority industry
 - Low priority industry
 - Not as an industry
 - Cottage industry
272. Minimum gap required for seed production programme of different varieties of the same crop in the selected field is
- One to two years.
 - Two-three years
 - One season
 - Five years
273. The act providing protection to a variety in India is
- Protection of Plant Variety and Farmers' Right Act
 - Plant Variety Protection and Farmers Right Act
 - Plant Variety Patent Act
 - IPR on Plant Variety Act
274. Seed act (1966, sub section 16 of section 2) defined a sub division of a kind identified by its growth, yield, plant, fruit, seed or other characters as
- Cultivar
 - Land race
 - Farmer variety
 - Variety
275. A notified under section 5 of Seed Act 1966; and Farmers' variety as defined in PPV act; and a variety about which there is common knowledge or any other variety, which is in public domain is known as _____ under PPVFR act.
- Extant variety
 - Extent variety
 - Extinct variety
 - Extend variety
276. A variety is designated as _____ in respect to the initial variety when it is predominantly derived from such initial variety
- Essentially derived variety
 - Extant variety
 - Extent variety
 - Old variety
277. The variety is notified under section 5 for _____ years.
- 05
 - 10
 - 15
 - 20

278. A variety, which has been traditionally cultivated and evolved by the farmers' in their fields. It may be a wild relative or land race of a variety about which farmer possess the common knowledge is known as
- Wild variety
 - Extant variety
 - Land race
 - Farmers' variety
279. A variety is notified by the office of
- Ministry of Agriculture State Government
 - Ministry of Agriculture Government of India
 - University
 - ICAR
280. Seed of only _____ varieties are produced by seed multiplication chain.
- Notified
 - Identified
 - Released
 - Denotified
281. India has adapted _____ tier system for seed multiplication.
- One
 - Two
 - Three
 - Four
282. The short form of International Union for the Protection of New Varieties of Plants
- IUPNVP
 - UPOV
 - PPV&FRA
 - ISTA
283. Full control on a protected variety is of
- Farmer
 - Authority
 - Breeder
 - ICAR
284. On grant of protection, _____ has rights of commercialization for the registered variety
- The breeder
 - The farmer
 - The Authority
 - ICAR

285. As per PPV and FR Act the right for researchers is **A. free access to registered varieties for research**
 B. No free access to registered varieties for research
 C. free access to registered varieties for market
 D. free access to registered varieties for export
286. In the Indian Act, for making EDVs
 A. **The breeders' authorization is needed**
 B. The breeders' authorization is not needed
 C. Only original breeder can develop the EDV
 D. Authorization of PPV and FR Authority is needed
287. Indian act granted _____ on plant variety
 A. Patent
 B. Copyright
 C. **Protection**
 D. Exclusive right
288. As per Indian Act methods and processes of agriculture and horticulture **A. Cannot be patented**
 B. Can be patented
 C. Can be granted copyright
 D. Can be granted exclusive right
289. The Indian Patent Amendment Act, call, cell lines, cell organelles like mitochondria and genes
 A. **Cannot be patented**
 B. Can be patented
 C. Can be granted copyright
 D. Can be granted exclusive right .
290. Is there any Act for protecting a new plant variety in India
 A. **The Protection of Plant Varieties and Farmers' Rights Act 2001**
 B. The Protection of Plant Varieties Act 2001
 C. The Plant variety Protection Act 2001
 D. UPOV
291. Under the TRIPS agreement it is obligatory on part of a Member to provide protection to new plant variety therefore India opted for
 A. **sui generis system**
 B. Patent
 C. Copy right
 D. Exclusive right

292. The PPV and FR act 2001 of India provides safeguards
- Only to farmers
 - Only to breeders
 - Only to researchers'
 - All the three
293. What kind of varieties is registerable under the PPV&FR Act
- Only extant varieties without confirmation of DUS testing
 - Only new varieties with confirmation of DUS testing
 - Only Public sector varieties after confirmation of DUS testing
 - Extant and new varieties with confirmation of DUS testing
294. The original variety from which the Essentially Derived Variety" is developed
- Should be protected
 - Should not be protected
 - May or may not beprotected
 - Should be patented
295. Plant variety is considered _____ if at the date of filing of the application for protection, the propagating material of such variety has not been sold with the consent of breeder or his successor for the purpose of exploitation of such variety earlier than one year in India before the date of filing such application
- Novel
 - Distinctive
 - Stable
 - Uniform
296. The stability of the new variety is tested/considered by
- Eberhart and Russell Model
 - Uniform and stable expression of the essential traits over the year and locations
 - Freeman and Perkins model
 - Perkins and Jinks model
297. The variety submitted for protection is considered as
- Candidate variety
 - Extant variety
 - Farmers variety
 - Reference variety
298. Deliberate plan of action to guide decisions and achieve rational outcome of seed is termed as seed
- Legislation
 - Policy
 - Act
 - Rule

299. Law which has been enacted by government body to regulate, to authorize, to provide (funds), to sanction, to grant, to declare or to restrict is known as seed
- Legislation
 - Policy
 - Act
 - Rule
300. The principal changes include regulation and registration in new seed bill is
- Seed can be sold only after certification from public sector, and no place for transgenic seed.
 - Even transgenic seed can be sold after certification from public sector
 - For certification only private seed certification laboratory will be accredited
 - All seeds to be sold, provisions for self-certification and accreditation of private seed testing laboratories, and regulation of transgenic seeds.
301. In New Seed Bill 2004
- Only varieties notified by the government need to be registered.
 - All seeds for sale must be registered.
 - All varieties for sale must be registered
 - Registration is compulsory only for private seed agencies
302. In New Seed Bill 2004
- No provision for transgenic varieties of seeds.
 - Special provisions for registration of transgenic varieties of seeds.
 - Transgenic varieties of seed will be register with non-transgenic without any discrimination
 - Transgenic varieties of seed of Indian origin will be register with non-transgenic without any discrimination
303. In the event of under performance of seeds New Seed Bill 2004 has
- No specific provision for compensation.
 - Provision of seed replacement
 - Provision for compensation to farmers under the Consumer Protection Act, 1986
 - Provision of cost of seed
304. As per New Seed Bill 2004 any person who contravenes any provisions of the Act or imports, sells or stocks seeds deemed to be misbranded or not registered can be punishable by a fine of
- Rs. 500-5000
 - Rs 1000- 10,000
 - Rs 5,000 to 25,000
 - Rs. 10000/-

Seed Certification

305. Minimum gap required for seed production programme of different varieties of the same crop in the selected field is
- A. 1-2 year
 - B. 2-3 years
 - C. 3-4
 - D. 4-5 year
306. The field will not be selected for seed production programme if in the Last year / season
- A. Same variety of the same crop was cultivated
 - B. Different variety of the same crop was cultivated
 - C. Different crop was cultivated
 - D. No crop was cultivated
307. Seed production plot should be under
- A. Sole cropping
 - B. Inter cropping
 - C. Mixed cropping
 - D. None of the above
308. Plants formed by the seed of the crop grown last year in the same field is known as
- A. Off type
 - B. Rogue
 - C. Volunteer plant
 - D. Objectionable weed
309. Off-type and rogues should be removed from seed production plot
- A. Before sowing
 - B. Before flowering
 - C. After flowering
 - D. At the time of maturity
310. Seed used for sowing purpose, isolation distance, volunteer plants, presence of offtypes and rogue may deteriorate
- A. Physical purity
 - B. Genetic purity
 - C. Genetical purity
 - D. None of the above
311. Removal of lentil plant from the seed production plot of *Lens culinaris* is known as
- A. Weeding
 - B. Rouging
 - C. Cleaning
 - D. Nicking

312. Modification in distance to keep the seed crop in isolation is permitted only in hybrid seed production of
- Maize
 - Pearl millet
 - Pigeonpea
 - Sunflower
313. The entire area planted under seed production programme by an individual constitutes a unit of certification provided the entire seed production programme is to produce seed of one category and one variety and the area should not exceed ha.
- 5ha
 - 10ha
 - 25 ha
 - 50ha
314. The tolerance limits for offtypes to establish the uniformity Under DUS test for Self-pollinated crops (except cereals) is _____
- 0.1%
 - 1%
 - 5%
 - 10%
315. The plant of cotton with presence of red flower on the same plant with white flower is considered as
- Offtype
 - Rogue
 - Out crossed
 - Genetic pure
316. Loss in genetic purity is an indicator of _____ deterioration
- Seed deterioration
 - Variety deterioration
 - Soil deterioration
 - Crop deterioration
317. Deterioration of varieties due to mutation such as 'fatuoids' in oats or 'rabbit ear' in peas can be controlled by
- Production of seed in isolation
 - Roguing
 - Seed treatment
 - Change in the seed production field
318. Presence of objectionable weed in the seed of rice produced by a farmer shows deterioration of
- | | |
|---------|-------------|
| A) Seed | B) Variety |
| C) Soil | D) Crop |

319. Rouging and cultivation of crop in isolation are the effective instruments to check deterioration.
- (a) Physical
 - (b) Genetic
 - (c) Crop
 - (d) Plant
320. Designated inseparable crop plants during seed production of wheat is a. Chickpea
- b. Mung bean
 - c. Oat
 - d. Lentil
321. Method applied by a breeder for development of a variety may influence deterioration of _____
- A) Seed B) Variety
 - C) Crop
 - D) Seed health
322. The plant of the same crop present in the field due to previous year/season crop is known as
- A) Shattered plant B) Volunteer plant
 - C) Weed
 - D) ODV
323. Plant of same variety with different expression mainly for phenological traits is removed from the seed production plot to reduce
- A) Genetic shift B) Genetic drift
 - C) Genetic erosion
 - D) Genetic identity
324. An isolation distance is maintained between two
- A) Genera
 - B) Crops
 - C) Cross incompatible species of the same genera
 - D) Varieties of the same crop
325. Certification of seed is done at
- A) One level B) Two levels
 - C) Three levels
 - D) Four levels

326. The most appropriate stage of inspections of loose-smut-susceptible wheat's and cross-pollinated crops is
- Pre flowering
 - Flowering
 - Post flowering
 - Maturity
327. The validity period of seed certification could be further extended provided on re-testing seed conforms to the prescribed standards for
- Three months
 - six months
 - Nine months
 - 12 months
328. The validity period of seed certification could be further extended provided on re-testing seed conforms to the prescribed standards in respect of
- Physical purity, germination and insect damage
 - Moisture content, germination and seed health
 - Genetic purity, physical purity and germination
 - Validity period can not be extended
329. Seed of the varieties eligible for certification shall be
- Protected under PPV and FR Act 2001.
 - Notified under section 5 of the seeds Act, 1966
 - Released by CVRC
 - Identified by the respective workshop of the crop
330. In general, the smallest number of plants of one cross-pollinated variety that should be grown to ensure genetic integrity
- 100 plants
 - 200 plants
 - 500 plants
 - 1000plants
331. At head formation stage a cross shape cut is made for seed stalk emergence in
- Egyptian clover
 - Potato
 - Cabbage
 - Castor
332. To induce seed stalk formation horizontal cut is made on the
- Curd of cauliflower
 - Sugarcane sett
 - Potato tuber
 - Sweet potato

333. Seed rate of true potato seed for one hectare is
- 2.5t/ha
 - 1kg/ha
 - 100kg/ha
 - 100g/ha
334. A variety of wheat is maintained by
- Single plant selection from single plant progeny of nucleus seed production plot
 - Single ear selection from ear to row progeny of nucleus seed production plot
 - Single plant selection from Breeder seed production plot
 - Single ear selection from Breeder seed production plot
335. The indent of breeder's seed production is allocated to different institutions, through proforma
- BSP I
 - BSP II
 - BSP III
 - BSP IV
336. In maintenance breeding programme genetic purity is maintained by
- Rouging of offtype plant
 - Removal of the line in which offtype plant appears
 - Rejection of the line in the event all the plants of the line are offtype
 - Rouging is never required in maintenance breeding
337. The report of the monitoring team is submitted to ICAR and Seed Division Ministry of Agriculture, GOI in proforma
- BSP I
 - BSP II
 - BSP III
 - BSP V
338. Foundation seed producer transfers the seed to
- Seed Corporation
 - Seed Processing Plant
 - Seed Certification Agency
 - The University
339. The Certified seed is processed under the supervision of the officer from
- Seed Corporation
 - Seed Certification Agency
 - Engineer of Seed Processing Plant
 - University/CAR institute

340. scattered fields constituting one unit of seed certification should not be separated by
- A. More than 40m
 - B. More than 50 m
 - C. More than 100m
 - D. More than 500m
341. Percent field that should be covered during field inspection is
- A. About 25-40%
 - B. About 50%
 - C. About 60-80 %
 - D. >90%
342. Number of plants/ earheads of seed crop which should be observed during field inspection as one unit is known as
- A. Field reckon
 - B. field count
 - C. Field step
 - D. Field assessment
343. Number of field counts required on the basis of field size ranges from A. 2-7
- B. 5-9
 - C. 7-10
 - D. 10-20
344. Number of field inspection for seed certification rages from A. 1-2
- B. 1-5
 - C. 2-4
 - D. 5-10
345. Sample dawn from different bags of a seed lot is known as A.
- Primary sample
 - B. Secondary sample
 - C. Submitted sample
 - D. Working sample
346. Physical purity analysis by number is performed on
- A. Composite sample B.
 - Submitted sample
 - C. Working sample
 - D. Secondary sample

347. Seed of black soybean present in yellow seeded variety of soybean in physical purity analysis by number will be considered as
- A. Inert matter
 - B. OCS
 - C. ODV
 - D. Pure seed
348. Which one of the following is not observed during physical purity analysis by number
- A. Other crop seed
 - B. Weed seed
 - C. Objectionable weed seed
 - D. Other variety seed
349. In physical purity analysis by weight immature, shrivelled, diseased germinated or under sized seed of the crop under test is considered as
- A. Inert matter
 - B. Pure
 - C. ODV
 - D. Unhealthy seed
350. The sum total of the part present in the seed sample other than the seed of the crop under test is termed as
- A. Inert matter
 - B. Other part
 - C. Dockage
 - D. Stone
351. Insect present in the seed sample is considered as
- A. Inert matter
 - B. Bio matter
 - C. Pure seed
 - D. Not a part of seed sample
352. The husk less seed of the following crops are counted separately in physical purity analysis
- A. Sorghum and pearl millet
 - B. Oat and barley
 - C. Sunflower and rice
 - D. Niger and sesame
353. Among the following crops the lowest physical purity percentage for seed certification is required for
- A. Groundnut
 - B. Wheat
 - C. Soybean
 - D. Pearl millet

354. Among the following crops the highest physical purity percentage for seed certification is required for
- A. Wheat
 - B. Rice
 - C. Cabbage
 - D. Okra

Hybrid

355. What is common among rice, maize, pearl millet, sunflower, safflower, castor, pigeonpea and cotton
- A. Exalbuminous seed
 - B. Allogamy
 - C. Commercial hybrid
 - D. Photo insensitivity
356. In the event of unavailability of male sterility in self pollinated field crops with small flower hybrid seeds may be produced commercially by
- A. Doak method
 - B. Rope pulling
 - C. Gametocide
 - D. Tripping
357. The male sterility system with nearly 50% male fertile plants in female line during hybrid seed production programme is
- A. CMS
 - B. GMS
 - C. CGMS
 - D. Self incapability
358. The crop of hybrid is
- A Homogeneous population of Homozygous plants
 - B Homogeneous population of Heterozygous plants
 - C. Heterogeneous population of Homozygous plants
 - D. Heterogeneous population of Heterozygous plants
359. When days to flowering in A and R line are same then _____ has not to be adopted for hybrid seed production of rice
- A. Staggered sowing
 - B. Rope pulling
 - C. Spray of GA₃
 - D. Seed treatment
360. IN CGMS system hybrid seed is harvested from
- A. A line
 - B. B line
 - C. R line
 - D. H line
361. Cytoplasmic male sterility may not be used for in safflower because of
- A. Low vigour in F₁ plant
 - B. No heterosis in F₁ plant
 - C. Male Sterility in F₁ plant
 - D. High cost of seed production

362. Presence of male fertile plant in 'A' line with otherwise similar expression of all the distinguishing traits during hybrid seed production is considered as
- B line plant
 - R line plant
 - Pollen shedder
 - Pollen load
363. In three line breeding, seed of restorer line is produced by
- AXR
 - BXR
 - AXB
 - RXR
364. Hybrid seed production involving three line breeding requires
- More seed of R than A line
 - More seed of A than R line
 - More seed of A than B line
 - More seed of B than A line
365. Seed of maintainer line in three line seed production programme is maintained by
- A XA
 - BXB
 - RXR
 - AXB
366. Chemical used for induction of male sterility is known as _____
- CHA
 - ABA
 - GHA
 - HCA
367. In hybrid seed production of sunflower, multiple heads are generally found in
- A line
 - B line
 - Rline
 - Hybrid plant
368. Among the 123 hybrid seed producer of cotton, 12 have submitted seed of female as hybrid. It may be verified with the help of _____ test at field level.
- ODV
 - GOT
 - DUS
 - VCU

369. Foundation seed for production of certified seed of hybrid category with the use of three line breeding will be
- Seed of hybrid
 - Seed of A and B line
 - Seed of B and R line
 - Seed of A and R line
370. Certified seed of _____ provided to farmer for cultivation forms homogeneous population of heterozygous plants.
- OPV
 - Composite
 - Synthetic
 - Hybrid
371. Chemical Hybridizing Agents are applied on _____ parent during hybrid seed production programme
- Male
 - Female
 - Both
 - Any one
372. In three line breeding programme male sterile pollens are produced in _____
- A line plant
 - B line plant
 - R line plant
 - Hybrid plant
373. R line is known as Restorer because
- It restores hybrid vigour
 - It restores male sterility
 - It restores male fertility
 - Its use is restricted
374. The term for same period of anthesis in 'R' line and stigma receptivity of 'A' line in hybrid seed production is termed as
- Synchronous maturity
 - Nicking
 - Staggering
 - Confounding
375. In seed multiplication chain, seed of 'A' and 'R' lines are considered as _____ for production of hybrid seed
- Breeder seed
 - Foundation seed
 - Certified seed
 - Parental seed

376. GA_3 is sprayed in hybrid seed production programme of rice for
- Inducing mal sterility
 - Achieving nicking
 - enchaining exertion of inflorescence
 - Enhancing time of stigma receptivity
377. Chemical required for hybrid seed production of rice is
- GA_3
 - GA_6
 - Urea
 - IAA
378. Row ratio in hybrid seed production of pearl millet is
- Equal number of male and female lines
 - >number of female and < number of male lines
 - <number of female and > number of male lines
 - No ratio between male and female line is required
379. Commercial hybrid seed production programme of cotton by hand emasculation and pollination involving male fertile female line is known as
- Doak method
 - Self incompatibility method
 - Two line breeding method
 - Three line breeding method
380. Cytoplasmic male sterility may be exploited for hybrid seed production of
- Soybean
 - Cotton
 - Potato
 - Okra
381. In terms of genetics A and B lines are a.
- Isogonic lines
 - Male sterile lines
 - Male fertile lines
 - Parent for hybrid seed production
382. The line that should not be made available to others for total control on the commerce of the CGMS based hybrid is
- A line
 - B line
 - R line
 - I line

383. Physical enhancement of pollination during hybrid seed production programme is known as
- Secondary pollination
 - Complementary pollination **c.**
Supplementary pollination
 - Auxiliary pollination
384. The cytoplasm of a hybrid produced by CGMS system will always be **a. Of A line**
- Of B line
 - Of R line
 - Hybrid
385. In the cytoplasm of R Line _____ gene is present
- Male sterile
 - Male fertile
 - Male sterile/fertile**
 - No gene of sterility or fertility
386. In a crop with availability of all the three types of male sterility system the cost of hybrid seed production will be the highest for
- CMS system **b.**
GMS system
 - CGMS system
 - It will be same
387. Hybrid seed produced in three line system express male fertility due to **A.**
Heterozygous condition for Fertility with sterile cytoplasm
- Heterozygous condition for Fertility with fertile cytoplasm
 - Homozygous recessive condition for sterility with fertile cytoplasm
 - Homozygous dominant condition for fertility with sterile cytoplasm
388. In a hybrid seed production programme involving CGMS system very high fruit setting in any one plant of A line indicates the possibility of
- Male sterility
 - Hybridity
 - Male fertility**
 - Heterosis
389. The highest seed replacement rate is of
- A Synthetic
 - A Composite
 - A hybrid**
 - A variety

390. Sterility is expressed in CGMS system when
- Gene for sterility is present in nucleus
 - Gene for sterility is present in cytoplasm
 - Gene for sterility is present both in cytoplasm and nucleus
 - Gene for sterility is present in nucleus or in cytoplasm
391. The difference between maintainer and male sterile line in cytoplasmic and cytoplasmic genetic male sterility system is of
- Cytoplasm
 - Nuclear gene
 - Both cytoplasm and nuclear gene
 - No difference
392. The restorer parent in hybrid seed production programme based on CGMS system may have
- homozygous recessive sterility gene on chromosome with fertility gene in cytoplasm
 - homozygous recessive sterility gene on chromosome with sterility gene in cytoplasm
 - homozygous dominant fertility gene on chromosome with sterility gene in cytoplasm
 - Heterozygous fertility gene on chromosome with fertility gene in cytoplasm
393. In GMS system maintainer is
- Heterozygous for the gene of sterility
 - Homozygous for the gene of sterility
 - Homozygous for the gene of fertility
 - Cytoplasm is responsible for sterility
394. In GMS system sterility and fertility may be judged based on expressions of
- Seed
 - Stigma
 - Plant growth
 - Pollen
395. In _____ system hybrid seed is produced by making cross between with heterozygous gene for sterility in pollen parent and homozygous gene for sterility in female parent
- CMS
 - GMS
 - CGMS
 - Self incompatibility

396. In hybrid seed production programme of rice the staggering is provided at
 A. at the time of transplanting B. At the time of nursery raising
 C. At the time of flowering
 D. At the time of harvesting
397. GA₃ is applied in hybrid seed production of
 A. Rice
 B. Maize
 C. Pearl millet
 D. All the three
398. What is the similarity between rice, pearl millet, maize and pigeonpea
 A. All are dicot
 B. All are cereal
 C. All have commercial hybrid
 D. All are often cross pollinated
399. The hybrid seed production programme based on CGMS should be kept in isolation to avoid
 A. Self pollination
 B. Cross pollination
 C. Outcrossing
 D. Goitenogamy
400. A farmer has to change the hybrid seed after every year due to deterioration in
 A. Physical purity
 B. Genetic purity
 C. Germinability
 D. Vigour
401. Supplementary pollination is a prerequisite in commercial hybrid seed production of
 a. Pigeonpea
 b. Pearl millet
 c. Rice
 d. Sorghum
402. In commercial hybrid seed production of maize
 A. Spadix is removed from female parent
 B. Spadix is removed from male parent C.
 Tassel is removed from female parent
 D. Tassel is removed from male parent

403. For hybrid seed production programme deatsseling is required in A
Maize
B Pearl millet
C Rice
D Sorghum
404. Space isolation can be altered In hybrid seed production programme of
A. Sorghum
B. Pearl millet
C. Sunflower
D. Maize
405. Traps put in the store to catch the insects like *Tribolium* and *Sitophilus* are
A Pheromone B
Allomone
C. Karomone
D. Hormone
406. Among the following locations the poor seed storage place is
A. Cuttack
B. New Delhi
C. Hyderabad
D. Shimla
407. A specified quantity of processed seed of a variety and class produced by a grower is known as
A. Seed lot
B. Seed batch
C. Seed bunch
D. Seed cluster
408. Prescribed maximum limit of a soybean seed lot is A.
10,000kg
B. 20,000 kg
C. 40,000 kg
D. Any quantity
409. Among the field crops the maximum size based on weight of true seed in a seed lot is of
A. Rice
B. Wheat
C. Soybean
D. Maize

410. Primary sample of rice stored in bags is drawn with the help of
 A. Seed Divider **B. Trier**
 C. Hand
 D. Cup
411. The composite sample is reduced to the required quality with the help of
 A. Hand
 B. Trier
 C. Grader
 D. **Divider**
412. Following divider is generally used to reduce the sample size
 A. Gamet divider
 B. Centrifugal divider
 C. Multiple slot divider
 D. **Boerner type divider**
413. Composite sample should be _____ times more than the submitted sample
 A. 5 times
 B. **10 times**
 C. 25times
 D. Any quantity
414. Working sample is prepared at
 A. Farmers Field
 B. In Seed Processing Plant before processing of seed
 C. In Seed Processing Plant after processing of seed
 D. **Seed Testing Lab**
415. Composite sample is prepared at
 A. Farmers Field
 B. In Seed Processing Plant before processing of seed **C. In Seed Processing Plant after processing of seed**
 D. Seed Testing Lab
416. Haulm cutting is required in seed production of
 A. Egyptian clover
 B. **Potato**
 C. Cauliflower
 D. Castor
417. Nucleus seed of carrot is produced by
 A) Seed to seed method
 B) Seed to root method **C) Root to seed method**
 D) Any method

418. Dormancy of _____ can be broken by treating the seed with 1% thiourea + 1 ppm GA₃ for one hour followed by 3% ethylene chlorohydrin solution and storage for 72 hr
 A Faba bean B Lentil
 C Jatropa **D Potato**
419. Minimum number of seeds tested for germination is A. 100
 B. 200
C. 400
 D. 500
420. The seed tested for germination is
 A. **Any seed from pure seed fraction of physical purity test**
 B. Healthy seed from pure seed fraction of physical purity test
 C. Any seed from working sample
 D. Healthy seed from working sample
421. In sand method of germination the seed is covered with
 A. Paper towel
 B. Wet sand
C. Dry sand
 D. Wax paper
422. Seeds of Kharif crops are normally exposed to C for testing the germination percent
 A. 20C **B. 25C**
 C. 30C
 D. 40C
423. Seedlings with well developed, complete, proportionate and healthy essential structures are known as
 A. **Intact seedlings**
 B. Seedling with slight defect
 C. Perfect seedling
 D. Normal seedling
424. The seedlings exhibiting slight defects in one of their essential structure with an otherwise satisfactory and balanced seedling are counted as
 A. **Germinated seedling**
 B. Abnormal seedling
 C. Ungerminated seed
 D. In any category

425. The seedlings with secondary infection with an otherwise satisfactory and balanced seedling are counted as
- Germinated seedling
 - Abnormal seedling
 - Ungerminated seed
 - In any category
426. Hard seed of the crop form family are considered as germinated
- Cruciferae and Compositae
 - Leguminosae and Malvaceae
 - Gramineae and Fabaceae
 - None of the family
427. Fresh ungerminated seeds are considered as
- Germinated
 - Abnormal seedling
 - Normal seedling
 - Seedling with slight defect
428. In germination test the seed that has absorbed water without any sign of decaying is known as
- Hard seed
 - Fresh Ungerminated seed
 - Dead seed
 - Stone
429. One farmer took certified seed production programme of three varieties of chickpea in 8 ha, 7 ha and 3 ha respectively and two varieties of wheat in 8 ha and 12 ha respectively. The number of units for seed certification will be__
- | | |
|------|------|
| A) 6 | B) 8 |
| C) 4 | D) 9 |
430. The designated inseparable crop plants during seed production of wheat. Is
- Chickpea
 - Mungbean
 - Lentil
 - Linseed
431. Seed production programme of cowpea, French bean, cluster bean and Indian bean should pass the seed certification standard for infection of only in hilly areas areas.
- Ascochyta leaf blight
 - Rhizoctonia root rot
 - Fusarium wilt
 - Yellow mosaic virus

432. The objectionable fungal disease of wheat both at field and seed level is
- A. **Karnal bunt**
 - B. Loose smut
 - C. Rust
 - D. Blight
433. The objectionable weed of wheat both at field and seed level
- A. ***Convolvulus arvensis***
 - B. *Phalaris minor*
 - C. *Melilotus alba*
 - D. *Cyprus rotandus*
434. Minimum number of seed that should be present in a working sample is
- A. 1000
 - B. 2000
 - C. **2500**
 - D. 5000
435. During Physical Purity analysis by number seed of any other crop present with the certified seed is considered as
- A. Weed seed
 - B. Inert matter
 - C. **Other Crop Seed**
 - D. ODV
436. _____ must be free from micro-organisms, toxic substances, insects and foreign seeds to test the germinability.
- A. Seed
 - B. **Substrata**
 - C. Germinator
 - D. Water
437. The test indicating the capacity of seed to form normal healthy seedlings under optimum conditions is known as
- A. Seed vigour test
 - B. Viability test
 - C. **Germination test**
 - D. GOT
438. All the matter present in the sample not defined as seed is known as during physical purity analysis by weight.
- A. Abiotic matter
 - B. **Inert matter**
 - C. Lifeless matter
 - D. Immobile matter

439. The pH of the substratum for germination test should be A. 5.0-7.0
B. 6.0-7.5
C. 7.0-8.0
D. 7.5-8.5
440. Germination of matured seed of mung bean on pod present on pod due to favourable environment is an example of
A. Vivipary
B. Pre harvest sprouting
C. Dormancy
D. Quiescence
441. The germination in which epicotyl expands to raise the first true leaf out of the soil and the hypocotyl remains short and compact is known as
A. Epigeal germination
B. Hypogeal germination
C. Vivipary
D. Sprouting
442. Chamber with facilities to manipulate temperature and photoperiod as per need with 100% humidity is known as
A. Incubator
B. Germinator
C. BOD incubator
D. Humidifier
443. Roots from embryonic tip instead of radicle are known as
A. Primary root
B. Seminal root
C. Aerial root
D. Adventitious root
444. Avoiding out crossing by keeping the crop in isolation is a very effective tool to maintain genetic purity of
A. Self pollinated crops
B. Cross pollinated crops
C. Vegetatively propagated crops
D. Cereals
445. Rouging is a very effective tool to maintain genetic purity of
A. Self pollinated crops
B. Cross pollinated crops
C. Often cross pollinated crops
D. Vegetatively propagated crops

446. Rouging for genetic impurity is not possible in
A. Inbred lines
B. Hybrids variety
C. Composite variety
D. Pure line
447. Selection involved in maintenance breeding is
A. Negative
B. Positive
C. Neutral
D. Recurrent
448. Formation of haploid archisporium cells by normal reductional division without pollination and formation of embryosac without fertilization is
A. Apospory
B. Diplospory
C. Parthenogenesis
D. Pseudogamy
449. During seed production programme disease escape accomplished by the avoidance of insect vector is known as
A. Tripping
B. Klenducity
C. Avoidance
D. Vector carnage
450. Presence of male and female part on the same plant in the same flower is known as
A. Monoecious
B. Hermaphrodite
C. Dioecious
D. Male sterile
451. A means of assessing whether or not the variation within the test results or between the tests is sufficiently wide to raise doubt about the accuracy of results is provided by
A. Acceptance
B. Homogeneity
C. Significance
D. Tolerance
452. Substitution of sexual reproduction by an asexual multiplication process without nucleus and cell fusion for seed production is known as
A. Amphimixis
B. Apomixis
C. Vegetative reproduction
D. Autogamy

453. The seed lot from which the sample is drawn should be relatively
- Homogeneous
 - Heterogeneous
 - Uniform
 - Variable
454. The sample is placed at a temperature of $130 \pm 2^{\circ}\text{C}$ for _____ hr as per requirement of the crop to determine moisture content
- ± 1
 - 3 ± 1
 - 4 ± 1
 - 17 ± 1
455. The application of an appropriate statistical method to test the results of seed testing enables the analyst to determine the validity of results within a calculated range of limits, the amount of this range is called the
- Acceptance
 - Homogeneity
 - Significance
 - Tolerance
456. During genetic purity test at field level the ODV is reported in
- Percentage by weight
 - Percentage/number
 - Number/number
 - Number/weight
457. The indicator in viability test is
- 2,3,5 triphenyl tetrazolium chloride
 - 2, 4,5,6 tetraphenyl tetrazolium bromide
 - Carbolic acid
 - Ninhydrin
458. The sample is placed at a temperature of _____ for 17 ± 1 hrs to determine moisture content
- $103 \pm 2^{\circ}\text{C}$
 - $130 \pm 2^{\circ}\text{C}$
 - $98 \pm 2^{\circ}\text{C}$
 - $198 \pm 2^{\circ}\text{C}$
459. To test the Foundation seed of wheat for Karnal bunt infection one has to observe minimum _____ seed
- 100
 - 1000
 - 10000
 - 100000

460. Which of the following part of a viable seed will not show red colour during viability test
- A. Embryo
 - B. Cotyledon
 - C. Endosperm
 - D. Scutellum
461. After preconditioning the coat of _____ seed is removed without any damage to cotyledon and embryo to treat the seed with indicator for viability test.
- A. Dicot
 - B. Monocot
 - C. Exalbuminous
 - D. Albuminous
462. _____ type seed is bisected longitudinally or pierced with a needle at a non-essential part of the seed to facilitate entry of indicator for viability test
- A. Dicot
 - B. Monocot
 - C. Exalbuminous
 - D. Albuminous
463. In germination test seedlings which are passed as intact or with slight defect but are infected by micro-organisms from a source other than seed are considered as
- A. Normal seedling
 - B. Abnormal seedling
 - C. Non germinated seed
 - D. Diseased seed
464. A colourless solution of 2,3,5 triphenyl tetrazolium chloride (indicator) reacts with hydrogen in living cell due to action of enzyme
- A. Peroxidase
 - B. Dehydrogenase
 - C. Nitrogenase
 - D. Pectinase
465. The colourless solution of Triphenyl tetrazolium chloride reacts with _____ in released in cell to form coloured substance.
- A. Oxygen
 - B. Hydrogen
 - C. Nitrogen
 - D. Carbon dioxide

466. _____ seed certification standard for germination of soybean is 70%
- A. Minimum
 - B. Maximum
 - C. Optimum
 - D. Average
467. Minimum seed certification standard for germinability of wheat, barley, triticale, oat, chickpea, rape seed and mustard is
- A. 65%
 - B. 75%
 - C. 85%
 - D. 90%
468. Seeds, which are neither hard nor germinated but remain clean, firm and apparently viable at the end of the test period of germination, are known as
- A. Fresh Ungerminated seed
 - B. Dead seed
 - C. Viable seed
 - D. Hard seed
469. Tetrazoluim test was evolved by
- A. G. Lakon
 - B. M. Mchargue
 - C. G. Gadd
 - D. A. Eidmann
470. The first seed testing laboratory was established in
- A. Saxony Germany 1869
 - B. Connecticut, America 1876
 - C. Zurich, Switzerland 1900
 - D. Rome, Italy 1921
471. The father of seed technology is
- A. M. Mchargue
 - B. Gadd
 - C. C. Eidmann
 - D. Friedrich Nobbe
472. International Seed Testing Laboratory was established in the year A. 1911
- B. 1921
 - C. 1931
 - D. 1941

473. The Food and Agriculture Organization was established in the year A. 1934
B. 1940
C. 1947
D. 1948
474. A method for separating and mapping protein bands from homogenized plant preparation is known as
A. Electrophoresis
B. DNA finger printing
C. Isozyme analysis
D. Protein analysis
475. Male Sterile Hybrid is formed in
A. CMS
B. GMS
C. CGMS
D. CHA
476. Seed of female parent in GMS system is maintained by making cross between
A. msms X MsMs
B. msms X msms C.
msms X Msms
D. Msms X Msms
477. During testing of soybean seed the term stone is used in
A. Physical purity
B. Genetic purity
C. Germination
D. Viability
478. During hybrid seed production programme CHA is applied on
A. A line
B. Female parent
C. Male parent
D. Hybrid
479. Germination in which development of shoot is not visible because a round shaped green portion is emerged out so that the new plant is already established when the real shoot emerges is known as
A. Hypogeal germination
B. Epigeal germination
C. Cleistogaeal Germination
D. Herko germination
480. Normal surrounding temperature, humidity and light without the use of artificial means
A. Ambient conditions

- B. Natural condition
 - C. BOD condition
 - D. Innate condition
481. The crop in which plume emerge first under anaerobic and radical in aerobic condition
- A. Wheat
 - B. Sugarcane
 - C. Rice
 - D. Soybean
482. Storage of respiring seeds in an oxygen free atmosphere is known as
- A. Anoxia
 - B. Anaerobic
 - C. Aerobic
 - D. Inundation
483. United States of America based seed testing system
- A. International Seed Testing Associate
 - B. American Seed Testing Association
 - C. Association of Official Seed Analysts
 - D. Seed Testing Association of USA
484. Blocking of cleaning screens by seeds or particles of intermediate size which get stuck in the holes of screen during seed processing is known as
- A. Blinding
 - B. Chocking
 - C. Slamming
 - D. Blocking
485. Abnormal growth of seedling in the absence of light
- A. Dark growth
 - B. Etiolation
 - C. Photolytic
 - D. Photo neutral
486. Death of seeds, germinating or young seedlings in the nursery resulting from attack by certain soil-living fungi due to rot of the stem near the surface of the soil is known as
- A. Damping-off
 - B. Rotting
 - C. Seedling death syndrome
 - D. Seed decaying
487. Method for cleaning seeds from particles with higher or lower specific density by submerging in water or other liquid
- A. Flotation
 - B. Sinking
 - C. Dipping
 - D. Rising
488. Vigour test method in which the ability of seed is tested under physical stress i.e., a layer of crushed brick stone grave
- A. GADA Test