1. Seed lot certificate colour is–
(A) Orange (B) Green
(C) Purple **(D) Orange or Green**

2. Hot water treatment is used to break dormancy in–
(A) Lentil (B) Cherry
(C) Cotton (D) None

3. Mak – 12 is a variety of–
(A) Maize (B) Medicago
(C) Bt Cotton (D) Tomato

4. Difference between seed and grain is–
(A) Seed processing **(B) Genetic purity**
(C) Seed quality (D) Cost

5. Fanning mill is–
(A) Air screen cleaner (B) Hammermill
(C) Blower (D) Rice mill

6. National Nematode collection of India is located at–
(A) New Delhi (B) Dharwad
(C) Anand (D) Bangalore

7. Size of Saltation is–
(A) 0'1 – 0·5 mm (B) < 0·1 mm
(C) 0'55 – 1 mm (D) > 0'1 mm

8. Seed coat peroxidase test is used for–
(A) Sorghum (B) Wheat
(C) Soybean (D) Groundnut

9. Pure seed fraction in Abelmoschus esculen: "is–
(A) 98 (B) 95
(C) 99 (D) 96

10. ___ Sugar found in germinating seed in large amount–
(A) Maltose (B) Sucrose
(C) Cellobiase (D) Lactose

11. The blotter method of seed health testing detects primarily–
(A) Virus **(B) Fungi**
(C) Bacteria (D) Nematodes

12. A sound seed certification programme requires–
(A) Direct participation of breeder
(B) Use of sophesticated equipment
(C) Classification of seed
(D) Support of law

13. The Rudimentary root of the seed or seedling that forms the primary root of the young plant is known as–
(A) Rachis **(B) Radicle**
(C) Rachilla (D) Raceme

14. Mode of pollination in maize is–
(A) Self-pollination (B) Vegetative propagation
(C) Cross-pollination (D) None

15. T2 test colour of living tissues of seed changed to–
(A) Red (B) Blue
(C) Yellow (D) Green

16. Maximum moisture content for safe storage in wheat seed is–
(A) 12 (B) 15
(C) 7 (D) None

17. The structure and function of nitrogenase can be studied by–
(A) NMR (B) EPR
(C) Massbauer spectroscopy **(D) All**

18. In India, normally how many generation system seeds are produced?
(A) 1 (B) 2
(C) 3 (D) 4

19. Dicot endospermic seed is–
(A) Castor (B) Fenugreek
(C) Both (A) and (B) (D) Bean

20. When the pathogen is loosely mixed with seed in the form of sclerotia, galls etc are called–
(A) Infection (B) Infestation
(C) Contamination **(D) Concomitant contamination**

21. Slow drying seed is–
(A) Cereals (B) Rapeseed and mustard
(C) Grass **(D) Pulses**

22. Which is total root pparasite?
(A) Orobanchae (B) Conophalis
(C) Epitagus **(D) All**

23. +ve photoblastic seeds are–
(A) Nigella (B) Silene
(C) Nemophills **(D) Arraranutum**

24. Germination is inhibited by–
(A) Red light (B) Blue light
(C) IR light (D) UV light

25. Tetrazolium test determine the level of activities of enzyme–
(A) ATPase (B) Dehydrogenase
(C) Carboxylase (D) Isomerase

26. Murate of potash is–
(A) K2S04 (B) KCl
(C) KN03 (D) K2HP04

27. Production of seedless grapes require–
(A) Gibberlins (B) NAA
(C) Ethylene (D) IAA

28. Inflorescence of cauliflower is called–
(A) Catkin (B) Head
(C) Curd (D) None

29. Pusa snow ball is variety of–
(A) Sapotqa **(B) Cauliflower**
(C) Ber (D) Cabbage

30. Development of embryo without fertillization is–
(A) Apomixis (B) Amghimixis
(B) Parheno carpy (D) None

COURSE TITLE: PRINCIPLES OF SEED TECHNOLOGY

COURSE: 243

Seed Science One Liner

Q1. Seed is- Fertilized and developed ovule

Q2. The smallest and the lightest seed is that of- Orchis

Q3. The largest and heaviest seed is that of- Lodoicea

Q4. The seed bearing plants belong to the group of- Phanerogam

Q5. Outer seed coat is- Testa

Q6. Seed bud is- Ovule

Q7. Tegmen is the name of- Inner seed coat

Q8. Hilum of seed is- Scar of funiculus

Q9. Tigellum is- Embryonic axis

Q10. Seed leaf is- Cotyledon

Q11. Which one is the reproductive unit having an embryo, reserve food and protective covering- Seed

Q12. In exalbuminous seeds, there is- Consumption of endosperm during development of seed

Q13. In exalbuminous seed the food is generally stored in- Cotyledons

Q14. The seed in which reserve food is present in the perisperm- Nymphaea

Q15. An endospermic seed is- Castor

Q16. Endosperm of Areca/Betel Nut is- Ruminate

Q17. Integumentary outgrowth present over the micropyle of Castor is- Caruncle

Q18. Hair of cotton are- Outgrowth of testa

Q19. Which is an albuminous seed- Castor, Maize

Q20. The remnants of nucellus present in the seed constitute- Perisperm

Q21. Cotyledon is absent in- Cuscuta

Q22. The plant in which hypocotyls stores food is- Bertholettia

Q23. A dicot albuminous seed is- Castor

Q24. A dicot exalbuminous seed is- Pea

Q25. In Maize, a tubular sheath covers the plumule. It is- Papery

Q26. In Maize, a tubuler sheath covers the plumule. It is- Coleoptiles

Q27. Aleurone is- Layer present on the outside of endosperm and having protein grains

Q28. Seed of Black Pepper is- Perispermic

Q29. Coleorhizae is- Covering of radicle

Q30. Aleurone layer takes part in- Enzyme synthesis

Q31. Which one is a monocotyledonous seed- Triticum aestivum

Q32. A spongy white bilobed structures present at the narrow tip of Castor seed is- Caruncle

Q33. The function of caruncle is to- Absorb water and its inward transfer through micropyle

Q34. Seeds are required for fruit growth- Early phase

Q35. A seed which does not possess micropyle and hilum is- Maize

Q36. In Ricinus, the outer white papery covering of endosperm is- Perisperm/tegmen

Q37. Cotyledonary node of embryo lies between- Epicotyls and hypocotyls

Q38. Seed having the longest viability is- Nelumbo

Q39. Viability of the seed is tested with- Triphenyl tetrazolium chloride

Q40. A seed cut into two halves and immersed in 0.1% triphenyl tetrazolium chloride solution. Its viability is indicated by development of colouration- Pink

Q41. Freshly liberated seeds of Erianthus hiemalis do not germinate due to- Immaturity of embryo

Q42. Freshly shed seeds can germinate immediately under favourable conditions in- Pisum sativum, Zea mays

Q43. Common cause of seed and bud dormancy is presence of- Abscisic acid

Q44. Seeds of tomato do not germinate in its pulp due to- Presence of ferulic acid

Q45. Seed dormancy may be due to- Hard impermeable seed coat

Q46. Wheat germ is- Embryo

Q47. The hormone which can break seed dormancy is- GA

Q48. Mechanical injuring of seed coat to break dormancy is called- Scarification

Q49. Thiourea is used in overcoming seed dormancy by- Counteracting inhibitors

Q50. The most important external factor for seed germination is- Water

Q51. The first process which occurs when the seed is placed in the soil is- Imbibitions

Q52. Seeds placed deep in the soil do not germinate because they are- **Unable to get sufficient oxygen**

Q53. During germination, micropyle of seed takes part in- **Absorption of water**

Q54.which are the external conditions required for seed germination- **Oxygen, moisture and suitable temperature**

Q55. A seed which does not require oxygen for germination is- **Rice, Typha**

Q56. A seed which is unable to germinate in the presence of light is- **Onion**

Q57. The seed in which dormancy can be broken by red light is- **Lettuce**

Q58. Part of the embryo which comes out first during seed germination is- **Radicle**

Q59. Which is not essential for seed germination in most cases- **Light**

Q60. Part of the seed which forms the shoot at the time of germination is- **Plumule**

Q61. Germination is hypogeal in- **Pea**

Q62. Vivipary is seed germination- **While contained inside the fruit**

Q63. Cotyledons constitute the first pair of leaves in- **Castor**

Q64. Epigeal germination occurs in- **Castor**

Q65. Vivipary occurs in- **Mangrove plants**

COURSE TITLE: PRINCIPLES OF SEED TECHNOLOGY

COURSE: 243

1. Presently ICAR has _____ breeder seed production units:
A.45
B.54
C.92
D.107

2. International Seed Testing Association was organized on:
A.10-Jul-24
B.12-Jul-25
C.12-Feb-42
D.10-Feb-24

3. Certification is not required for:
A.Nucleus seed
B.Breeder seed
C.Foundation seed
D.Certified seed

4. Physical purity of 95% is permissible for the foundation and certified seed of:
A.Soya bean
B.Groundnut
C.Spinach
D.Carrot

5. Contamination permitted in maize is:
A.1%
B.2%
C.0.10%
D.0.20%

6. Seed moisture varies from crop to crop in ranges from:
A.15-20%
B.30-40%
C.1-2%
D.9-12%

7. The recommended ratio of male rows to female rows is in hybrid bajra production:
A.2 to 4
B.1 to 2
C.4 to 8
D.3 to 6

8. Argemone mexicana is an objectional weed in:
A.Wheat
B.Barley
C.Rapeseed/Mustard
D.Chick pea

9. Seed certification requires:
A.An improved variety
B.Genetic purity
C.Physical purity
D.All of the above

10. Improved seed includes:
A.Nucleus seed
B.Breeder seed
C.Foundation seed
D.All of the above

11. nternational Crop Improvement Association (ICIA) in _____ classified seed into different categories:
A.1964
B.1946
C.1963
D.1972

12. Initial seed of an improved variety is called:
A.Nucleus seed
B.Breeder seed
C.Foundation seed
D.Certified seed

13. Cotylodons in gymnosperms are called:
A.Embryo
B.Integuments
C.Mega-gametophyte
D.Endosperm

14. Production of breeder seed in cotton requires an isolation distance of:
A.20 metres
B.30 metres
C.50 metres
D.75 metres

15. Seed coat is derived from:
A.Testa
B.Embryo
C.Endosperm
D.Nucellus

16. Headquarters of the Union for the Protection of New Plant varieties is in:
A.Thailand
B.USA
C.Denmark
D.Switzerland

17. The first private seed came into existence in the year:
A.1918
B.1987
C.1959
D.1912

18. Cotyledons in monocots are called:

A.Endosperm

B.Mega-gametophyte

C.Embryo

D.Integuments

19. The hybrids developed by Government Agencies or Government Institutions and Agricultural Universities are called:

A.Private hybrids

B.Institutional hybrids

C.Public hybrids

D.Government hybrids

20. Breeder seed production units of ICAR producing _____ tonnes of breeder seed:

A.7300

B.37

C.3700

D.73

21. In wheat, production of foundation seed needs an isolation distance of:

A.Three metres

B.Five metres

C.Ten metres

D.Twenty metres

22. Cuscuta is an objectional weed of:

A.Cowpea

B.Berseem

C.Sorghum

D.Lucerne

23. Progeny of a nucleus seed is referred to as:

A.Certified seed

B.Foundation seed

C.Registered seed

D.Breeder seed

24. In flowering plants a second seed coat is known as:

A.Integument

B.Aleurone layer

C.Tegamen

D.Inner ventral scale

25. Freedom from inert matter and defective seeds:

A.Genetic purity

B.Physical purity

C.Defective purity

D.Normal purity

26. Pure Live Seed (PLS) is related to:

A.Physical purity

B.Genetic purity

C.Germination percentage

D.Contamination

27. Breeder seed is _____ % pure:
A.99
B.100
C.70
D.99.99
28. In Bhindi, production of foundation seed needs an isolation distance of:
A.100 metres
B.50 metres
C.200 metres
D.3 metres
29. In sunflower, production of foundation seed requires an isolation distance of (metres):
A.400
B.800
C.200
D.100
30. Breeder seed is the progeny of:
A.Foundation seed
B.Registered seed
C.Nucleus seed
D.Certified seed
31. Plant Breeders' Rights are operaating in:
A.Germany
B.Denmark
C.Netherlands
D.All of the above
32.The first symbolic Importance of seed started after the report of Famine Commission in:
A.1881
B.1890
C.1891
D.1892
33. Seed meant for generation distribution to the farmers for commercial crop production refers to:
A.Foundation seed
B.Breeder seed
C.Certified seed
D.Nucleus seed
34. Standards of germination for seed certification in chillies:
A.70%
B.90%
C.80%
D.60%
35. Coloured varieties of rice have _____ aleurone layer:
A.Thinner
B.Thicker

C.Coarse
D.Smooth

36. Seed is a:

A.Immature embryo
B.Mature embryo
C.Developed embryo
D.Undeveloped embryo

37. TDC came into existence in:

A.1996
B.1962
C.1926
D.1969

38. First private seed company was:

A.Monsanto
B.Namdhari
C.Sutton & Sons
D.Takii

39. Physical purity, is permissible (98%) in the crop:

A.Groundnut
B.Rice
C.Soya bean
D.Spinach

40. The coarse rice generally has a _____ aleurone layer:

A.Larger
B.Smaller
C.Bigger
D.Smoother

GPB-243 MCQ

1. Seed drying is very important to maintain its–
(A) Viability and vigour
(B) Protein content
(C) Oil content
(D) Chemical composition

2. The equipment used to apply chemicals that involves suspension and wettable powder treatment material in water is
(A) Slury treaters
(B) Direct treaters
(C) Panogen treaters
(D) Mist-o-matic treaters

3. Average diameter of bulbet of onion (seed standard) shall not be less than
(A) 2.5 cm
(B) 1 cm
(C) 3 cm
(D) 2 cm

4. Indian cotton is–
(A) G. herbaceiuni
(B) G. arboreum
(C) G. hirsuium
(D) G. barbadense

5. For seed samples kept in an incubator for germination test, light is–
(A) Alwasy essential
(B) Never essential
(C) Not harmful
(D) Harmful

6. Seedlessness in fruits is called as–
(A). Parthenogensis
(B) Parthenocarpy
(C) Apomixis
(D) None

7. Centre of origin of rice is–
(A) SW Asia

(B) SE Asia
(C) South America
(D) North America

8. The GOT is done for verification of–
(A) Physical purity
(B) Genetic purity
(C) Germination %
(D) None

9. Possible reasons for seed dormancy is–
(A) Presence of pathogens
(B) Cracking of hulls
(C) Immature embryo
(D) Green distoration

10. ISTA was established in the year–
(A) 1871
(B) 1876
(C) 1921
(D) 1924

11. While sampling from a seed lot of 50 bags, the minimum number of primary sample should be–
(A) 5
(B) 10
(C) 15
(D) 20

12. Certified seed of cotton should have minimum germination of–
(A) 50%
(B) 60%
(C) 70%
(D) 80%

13. Critical stages of irrigation in cowpea……..
(A) Flowering & pod formation
(B) Flowering
(C) Seedling
(D) None of these
14. Family of soybean :
(A) Leguminosae
(B) Apilionceaceae

(C) Compositae
(D) Linaceae

15. Seed certification requires:
(A). An improved variety
(B). Genetic purity
(C). Physical purity
(D). All of the above

16.Breeder seed is the progeny of:
(A). Foundation seed
(B). Registered seed
(C). Nucleus seed
(D). Certified seed

17.Headquarters of the Union for the Protection of New Plant varieties is in:
(A). Thailand
(B). USA
(C). Denmark
(D). Switzerland

18. The recommended ratio of male rows to female rows is in hybrid bajra production
(A). 2 to 4
(B). 1 to 2
(C). 4 to 8
(D). 3 to 6

19. Occurrence of more than one embryo in seed is knwon as–
(A). Polysomy
(B). Polyembryoy
(C). Apogamy
(D). None

20. First hybrid of pegionpea in the world is–
(A). ICPH - 8
(B). ICPH - 10
(C). PUSA - Arhar
(D). PUSA HR – I

21. The moisture content for safe storage of cerrals is–
(A). 12-14%
(B). 14-16%
(C). 16-18%
(D). 18-20%

22.The constutuent of wheat affecting its baking quality is–
(A). Glutin
(B). Pectin
(C). Vitamin B1
(D). Moisture

23. The Rudimentary root of the seed or seedling that forms the primary root of the young plant is known as–
(A). Rachis
(B). Radicle
(C). Rachilla
(D). Raceme

24. Mode of pollination in maize is–
(A). Self-pollination
(B). Vegetative propagation
(C). Cross-pollination
(D). None

25. T2 test colour of living tissues of seed changed to–
(A). Red
(B). Blue
(C). Yellow
(D). Green

26. Maximum moisture content for safe storage in wheat seed is–
(A). 12
(B). 15
(C). 7
(D). None

27. In India, normally how many generation system seed are produced?
(A). 1
(B). 2
(C). 3
(D). 4

28. Slow drying seed is–
(A). Cereals
(B). Rapeseed and mustard
(C). Grass
(D). Pulses
29. Germination is inhibited by–
(A). Red light
(B). Blue light
(C). IR light

(D). UV light

30. Certification is not required for:
(A).Nucleus seed
(B).Breeder seed
(C).Foundation seed
(D).Certified seed

31. Contamination permitted in maize is:
(A).1%
(B).2%
(C).0.10%
(D).0.20%

32. Production of breeder seed in cotton requires an isolation distance of:
(A).20 metres
(B).30 metres
(C).50 metres
(D).75 metres

33. In wheat, production of foundation seed needs an isolation distance of:
(A).Three metres
(B).Five metres
(C).Ten metres
(D).Twenty metres

34. Freedom from inert matter and defective seeds:
(A).Genetic purity
(B).Physical purity
(C).Defective purity
(D).Normal purity

35. Breeder seed is _____ % pure:
A.99
B.100
C.70
D.99.99

36. In Bhindi, production of foundation seed needs an isolation distance of:
(A).100 metres
(B).50 metres
(C).200 metres
(D).3 metres

37. Seed is…..
(A).Developed ovule

(B).Fertilized and developed ovule
(C).Developed ovary
(D).Fertilized and developed ovary

38. Outer seed coat is…..
(A).Testa
(B).Tegmen
(C)Hilum
(D)Funiculus

39. Which one is a monocotyledonous seed
(A).Pisum sativum
(B).Cicer arietinum
(C).Dolichos lablab
(D)Triticum aestivum

40. Seed dormancy may be due to
(A).Permeable seed coat
(B).Hard impermeable seed coat
(C).Thin seed coat
(D). Lack of reserve food

41. The hormone which can break seed dormancy is
(A).Coumarin
(B).Ferulic acid
(C).ABA
(D).GA

42. Mechanical injuring of seed coat to break dormancy is called
(A).Scarification
(B).Stratification
(C).Impaction
(D).Compaction

43. Germination is hypogeal in
(A).Cotton
(B).Pea
(C).Castor
(D).Bean
44. Vivipary is seed germination
(A).In strong light
(B).Without involving cotyledons
(C).With cotyledons coming above ground
(D).While contained inside the fruit

45. Hot water treatment is used to break dormancy in
(A).Lentil
(B).Cherry
(C).Cotton
(D).None

46. Difference between seed and grain is…
(A).Seed processing
(B).Genetic purity
(C).Seed quality
(D).Cost

47. The separation of the field of a variety from that of another variety of the same crop to avoid contamination.
(A).Genetic purity
(B).Isolation distance
(C).Seed dormancy
(D).Roguing

48. Seed remain viable for long time at low temperature and low moisture content called as …
(A).Recalcitrant seed
(B).Foundation seed
(C).Orthodox seed
(D).Breeder seed

49. Father of seed technology is…
(A).Nobbe
(B).Staphen Hales
(C).Charles Darwin
(D).Shelford

50. Genetic purity in the field is maintained by…
(A).Seed testing
(B).Field inspection
(C).Roguing
(D).Seed sampling

51. If cotyledons are brought above the soil, the germination is
(A). hypogeal
(B). epigeal
(C). vivipary
(D). none of these

52. The reserve food material in castor seed mostly occurs in the form of

(A). carbohydrates
(B). proteins
(C). oil
(D). sugar

53. Which of the commercial classes of seed is sold to farmers:
(A). producer
(B). breeder
(C). registered
(D). foundation

54.Seed test that provides information on weed seed and inert material is called:
(A). purity test
(B). clean seed test
(C). viability test
(D). wholesomeness test

55. In cryogenic storage, seeds are stored at:
(A). -65 0^C
(B). -100 0^C
(C). -192 0^c
(D). 75 0^C

56. In Bhindi, production of foundation seed needs an isolation distance of:
(A). 100 metres
(B). 50 metres
(C). 200 metres
(D). 3 metres

57. In sunflower, production of foundation seed requires an isolation distance of (metres):
(A). 400 metres
(B). 800 metres
(C). 200 metres
(D). 100metres

58. For foundation seed production colour tag is used in the fields is:
(A). White
(B). Buff
(C). Blue
(D). None of above

59. Foundation seed is obtained from:

(A).Nucleus seed
(B).Breeder seed
(C).Foundation seed
(D).Certified seed

59. Blue colour tag is issued for
(A).Nucleus seed
(B).Breeder seed
(C).Foundation seed
(D).Certified seed

60.Seed rate of sorghum is _____ kg/ha.
(A).12-15
(B).10-12
(C).8-10
(D).15-20

61. Viability of the seed is tested with
(A). Triphenyl tetrazolium chloride
(B). Indole acetic acid
(C). Mercuric chloride
(D). 2, 4-D

62.Common cause of seed and bud dormancy is presence of
(A). Ethylene
(B). Cytokinins
(C). Abscisic acid
(D). Both B and C

63.Seeds of tomato do not germinate in its pulp due to
(A). Presence of ferulic acid
(B). Presence of excess salt
(C). Absence of oxygen
(D). Presence of ABA

64. Thiourea is used in overcoming seed dormancy by
(A). Chemical scarification
(B). Counteracting inhibitors
(C). Inducing cell division
(D). Develop osmotic pressure

65. The most important external factor for seed germination is
(A). Light
(B). Soil
(C). Oxygen
(D). Water

66. A seed which is unable to germinate in the presence of light is
(A). Viscum
(B). Onion
(C). Bean
(D). Maize

67. Germination is hypogeal in
(A). Cotton
(B). Pea
(C). Castor
(D). Bean

68. Epigeal germination occurs in
(A). Gram
(B). Pea
(C). Castor
(D). Maize

69. The equipment used for separating, cleaning and grading small seeds from given sample is_____?
(A). Seed blower
(B). Seed sorter
(C). Seed divider
(D).A and B

70. Botanical name of American cotton is_____?
(A). G. hirsutum
(B). G. arborium
(C). G.barb dense
(D).Non of these