

# PUNJAB PUBLIC SERVICE COMMISSION

**Objective Type Test (July-2017) for Recruitment of Agriculture Development Officers in the Department of Agriculture, Government of Punjab.**

**READ INSTRUCTIONS BEFORE FILLING ANY DETAILS OR ATTEMPTING TO ANSWER THE QUESTIONS.**

**Candidate's Name** \_\_\_\_\_

**Father's Name** \_\_\_\_\_

**Date of Birth**             

DD                      MM                      YYYY

**Category Code\***

(\*as given in the admit card)

**OMR Response Sheet No.** \_\_\_\_\_

**Roll No.** \_\_\_\_\_

**Candidate's Signature** (Please sign in the box)

<b>Question Booklet Set</b>
A
<b>Booklet Series No.</b>

## INSTRUCTIONS

<p>1. The candidate shall NOT open this booklet till the time told to do so by the Invigilation Staff. However, in the meantime, the candidate can read these instructions carefully and subsequently fill the appropriate columns given above in CAPITAL letters. The candidate may also fill the relevant columns (other than the columns related to marking responses to the questions) of the Optical Mark Reader (OMR) response sheet, supplied separately.</p>	<p>9. The candidates shall ensure that the responses are marked in correct manner and any adverse impact due to wrong marking of responses would be the responsibility of the respective candidate. The following are some of the <b>examples of wrong marking</b> of responses on the OMR response sheet.</p> <div style="text-align: center;"> </div>
<p>2. Use only blue or black ball point pen to fill the relevant columns on this page. Use of fountain pen may leave smudges which may make the information given by the candidate here illegible.</p> <p>3. The candidate shall be liable for any adverse effect if the information given above is wrong or illegible.</p>	<p>10. The candidates, when allowed to open the question paper booklet, must check the booklet to confirm that the booklet has complete number of pages, the pages printed correctly and there are no blank pages. In case there is any such error in the question paper booklet then the candidate should immediately bring this fact to the notice of the invigilation Staff and obtain a booklet of the same series as given earlier.</p>
<p>4. Before attempting the paper, the candidate must fill all the columns given above on this page and sign at the appropriate place.</p> <p>5. Each candidate is required to attempt 100 questions in 120 minutes, except for orthopaedically/visually impaired candidates, who would be given 40 extra minutes, by marking correct responses on the OMR sheet which would be supplied separately to the candidates.</p>	<p>11. The serial number of the new booklet should be entered in the relevant column of the OMR. The Invigilation Staff must make necessary corrections in their record regarding the change in the serial no. of question booklet.</p>
<p>6. The candidate must write the following on the OMRs sheet:                  (a) Serial number of OMR sheet supplied to him/her for marking the responses to the questions.                  (b) Serial number of the question booklet                  (c) Series of the question booklet. Failure to do so may lead to cancellation of candidature or any other action which the Commission may deem fit.</p>	<p>12. The question paper booklet has 13 pages.</p> <p>13. Each question shall carry three marks.</p>
<p>7. The candidate should darken the appropriate response to the question by completely darkening the appropriate circle/oval according to his/her choice of response i.e. a, b, c or d in the manner shown in the example below.</p> <div style="text-align: center;"> <p>a                      b                      c                      d</p> </div>	<p>14. There are four options for each question and the candidate has to mark the MOST APPROPRIATE answer on the OMR response sheet using blue or black ball point pen.</p>
<p>8. Partly darkening the circle/oval on the OMR response sheet or using other symbols such as tick mark or cross would not result in evaluation of the response as the OMR scanner can only interpret the answers by reading the darkened responses in the manner explained in preceding paragraph. Darkening more than one circle/oval as response to a question shall also be considered as wrong answer.</p>	<p>15. There is no negative marking for wrong answers or questions not attempted by the candidate.</p>

1. Which variety of moong takes shortest period to mature:
  - a) SML 668
  - b) ML 267
  - c) PBM 1
  - d) PAU 911
  
2. With respect to integrated pest management the threshold level means:
  - a) The level of pesticide required to manage a pest
  - b) The levels of pest populations at which one should control the pest to prevent the unacceptable injury
  - c) A type of structure designed to be more resistant to pest invasion
  - d) The levels of heat and moisture required for a pest to survive
  
3. Which of the following crops can yield highest quantity of green fodder:
  - a) Lucerne
  - b) Oats
  - c) Berseem
  - d) Senji
  
4. When a single enterprise contributes more than 50% of the total farm income, it is called:
  - a) Diversified farming
  - b) Specialized farming
  - c) Mixed farming
  - d) Integrated farming
  
5. Statutory minimum support price is announced for:
  - a) Wheat
  - b) Paddy
  - c) Maize
  - d) Sugarcane
  
6. Which one of the following statements is incorrect for the management of 'wilt disease' in chickpea?
  - a) Adoption of crop rotations
  - b) Use of healthy seed
  - c) Growing of resistant varieties
  - d) Foliar spray of fungicide
  
7. Which of following is appropriate for a clay soil:
  - a) Sand < 45% Silt < 40% Clay  $\geq$  40%
  - b) Sand > 45% Silt < 40% Clay < 40%
  - c) Sand < 45% Silt > 40% Clay > 45%
  - d) None of these
  
8. Assuming bulk density and particle density of a soil as 1.5 and 2.5 g/cc, respectively, value of porosity will be:
  - a) 20%
  - b) 40%
  - c) 60%
  - d) 80%

9. If germination per cent of seed sample is 90, purity 80% what is real value:
- a) 72.0%
  - b) 88.8%
  - c) 90%
  - d) 63%
10. Sugarcane is considered mature, if Brix ratio is:
- a) > 1.0
  - b) > 0.9
  - c) > 0.8
  - d) > 0.5
11. Central Institute of Agricultural Engineering is situated at:
- a) Ludhiana
  - b) Amritsar
  - c) Bhopal
  - d) Jaipur
12. In which condition roller is used:
- a) Where soil is sandy
  - b) Where soil has clods
  - c) Where soil is wet
  - d) Where soil is friable
13. Suitable season for planting of root cutting:
- a) Spring
  - b) Summer
  - c) Rainy
  - d) Winter
14. Enzyme used for hydrolysis of starch:
- a) Amylase
  - b) Cellulase
  - c) Galactosidase
  - d) Protease
15. The Field rats are controlled by:
- a) Zinc phosphide
  - b) Zinc oxide
  - c) Zinc chloride
  - d) Copper sulphate
16. Lady bug is a predator of:
- a) Moths
  - b) Bugs
  - c) Beetles
  - d) Aphids

17. The temperature requirement of rice at blooming stage is:
- 18.5 to 21.5°C
  - 22.5 to 25.5°C
  - 26.5 to 29.5°C
  - 30.5 to 33.5 °C
18. The *Khaira* disease of rice may be controlled by spraying a mixture of:
- 5 kg ZnSO<sub>4</sub> + 2.5 kg lime
  - 2.5 kg ZnSO<sub>4</sub> + 5 kg lime
  - 5 kg ZnSO<sub>4</sub> + 5 kg lime
  - 2.5 kg ZnSO<sub>4</sub> + 2.5 kg lime
19. The insect which is known to transmit 'Grassy stunt virus disease' in rice crop:
- Green leaf hopper
  - Brown leaf hopper
  - White backed hopper
  - Leaf roller
20. Which species of wheat is not grown in India?
- Triticum turgidum*
  - Triticum durum*
  - Triticum dicoccum*
  - Triticum aestivum/ vulgare*
21. Optimum depth of sowing for high yielding Mexican dwarf wheat is:
- 2 cm
  - 5 cm
  - 8 cm
  - 10 cm
22. Tikka disease of groundnut spreads fast under the conditions of:
- High temperature and high relative humidity
  - Low temperature and high relative humidity
  - High temperature and low relative humidity
  - Low temperature and low relative humidity
23. Retting in jute is best done at the temperature of:
- 28°C
  - 31°C
  - 34°C
  - 37°C
24. For raising sugarcane and potato together, it is necessary to plant cane at the distance of:
- 60 cm
  - 70 cm
  - 80 cm
  - 90 cm

25. Which one of the following statements is not correct with respect to the criteria for selection of seed cane?
- The top one-third to half portion of cane is best for sowing
  - Seed cane should be taken from crop of not more than 10-12 months age
  - Ratoon crop is suitable for seed purpose
  - It should be free from diseases
26. About 35 to 40 thousands of setts are required for planting of one-hectare area which can be obtained from:
- 6.5-7.0 tonne of cane
  - 7.0-7.5 tonne of cane
  - 7.5-8.0 tonne of cane
  - 8.0-8.5 tonne of cane
27. The most destructive disease of sugarcane causing heavy loss to the sugar industries as well as the growers is caused by the fungus:
- Collectotrichum falcatum*
  - Ustilago scitaminea*
  - Leptosparia salvinii*
  - None of the above
28. The seed rate of white jute is required for line sowing:
- 2-4 kg/ha
  - 4-6 kg/ha
  - 6-8 kg/ha
  - 8-10 kg/ha
29. The nicotine content of the leaves of *Nicotianarustica* ranges from:
- 1.5 to 6%
  - 2.5 to 6%
  - 3.5 to 8%
  - 4.5 to 8%
30. Tobacco plant grows and matures rapidly when average temperature is about:
- 23°C
  - 25°C
  - 27°C
  - 29°C
31. Weeds which are very short lived by nature are called:
- Heliophytes
  - Ephemerals
  - Schiophytes
  - Persistent weeds
32. Important grassy weed of transplanted rice is:
- Echinochloa crusgalli*
  - Cirsium arvense*
  - Anagallis arvensis*
  - Fumaria parviflora*

33. Glyphosate herbicide is:
- a) Non-translocated selective
  - b) Contact
  - c) Systemic and selective
  - d) Translocated non-selective
34. Imezathapyr is a POST emergence herbicide for:
- a) Pulses
  - b) Oilseeds
  - c) Pulses and oilseeds both
  - d) Millets
35. Diuron is most commonly used herbicide for:
- a) Rice
  - b) Sugarcane
  - c) Soybean
  - d) Wheat
36. The appropriate dose (g/ha) of Metsulfuron for wheat is:
- a) 5
  - b) 50
  - c) 100
  - d) 250
37. Atrazine is a:
- a) Post emergence
  - b) Pre-emergence
  - c) Pre & post emergence
  - d) Pre-plant
38. The most sensitive stage of rice to soil moisture stress is:
- a) Panicle initiation
  - b) Booting
  - c) Early heading
  - d) Flowering
39. The promising irrigation technique in rice crop is:
- a) Intermittent irrigation
  - b) Flood irrigation
  - c) Drip irrigation
  - d) Surge irrigation
40. The consumptive use of water includes:
- a) ET + application losses + water for special purposes
  - b) ET + application losses
  - c) ET + water for special need
  - d) ET + water required for metabolic purposes

41. Irrigation is scheduled at IW/CPE ratio of 0.8 and the crop is irrigated to a depth of 5.0 cm when the CPE is:
- 5.25 cm
  - 6.25 cm
  - 7.25 cm
  - 8.25 cm
42. Fertiliser material that has maximum sulphur content is:
- $\text{FeSO}_4$
  - $\text{MnSO}_4$
  - $\text{ZnSO}_4$
  - $\text{CuSO}_4$
43. Evaporation losses are expected to be higher under:
- Minimum tillage
  - Zero tillage
  - Conservation tillage
  - Reduced tillage
44. Blade hoe is primarily used for:
- Mulching
  - Bunding
  - Earthing
  - Hoeing
45. A plan according to which crops grown on individual plots of a farm during a given period of time to maximise return and enhance soil fertility is:
- Cropping system
  - Cropping pattern
  - Crop rotation
  - Cropping scheme
46. Yield advantage is higher than the pure crops in this type of intercropping system:
- Parallel cropping
  - Companion cropping
  - Multi-storey cropping
  - Synergistic cropping
47. 'Heart rot' in Sugarbeet and 'water core' in turnip are the deficiency symptoms of:
- Zinc
  - Copper
  - Boron
  - Manganese
48. How much DAP is required to supply N @90 kg/ha in an area of 18 m<sup>2</sup>
- 600 g
  - 700 g
  - 800 g
  - 900 g

49. C/ N ratio of paddy straw, in general, is:
- 60:1
  - 70:1
  - 80:1
  - 90:1
50. Which one of the following diseases is caused by MLOs?
- Ratoon stunting of sugarcane
  - Grassy shoot of sugarcane
  - Leaf blight of rice
  - Brown rot of potato
51. A soil is having bulk density of 1.5 then the pore space (%) will be:
- 41
  - 42
  - 43
  - 44
52. A soil having the organic carbon content of 0.55% then how much organic matter (%) would be:
- 0.96
  - 0.97
  - 0.98
  - 0.99
53. A-value technique is used to calculate the original soil supply of:
- N
  - P
  - K
  - S
54. Incorrect statement related to microbial insecticide is:
- Use of pathogens for killing insects
  - Free from harmful residue
  - Phytotoxic to crops at higher doses
  - Harmless to beneficial insects
55. The ratio between organic N and S in crop residue generally ranges between:
- 5-10 : 1
  - 10-15 : 1
  - 15-20 : 1
  - 20-25 : 1
56. Reduction in dry matter, decrease in amino acid content and accumulation of nitrates is the deficiency symptoms of:
- Copper
  - Zinc
  - Boron
  - Nickel

57. The total depth of water required by a crop is known as:
- Delta
  - Duty of water
  - Cusec
  - Dead storage
58. \_\_\_\_\_ is used for measuring percolation and leaching losses from a column of soil under controlled conditions.
- Infiltrometer
  - Lysimeter
  - Irrrometer
  - Porometer
59. Mulching materials are not being utilised to:
- Reduce evaporation
  - Improving soil fertility
  - Maintains temperature
  - Weed control
60. Which of the following methods of irrigation has highest water use efficiency?
- Surface
  - Furrow
  - Sprinkler
  - Drip
61. Which one of the following element is not essential for plant growth is:
- Nickle
  - Sodium
  - Manganese
  - Zinc
62. 'Indore Process' is related to:
- Green manuring
  - Composting
  - Poultry feeding
  - Irrigation scheduling
63. Which one of the following essential nutrient elements is absorbed both as an anion and a cation by some plants?
- Nitrogen
  - Potassium
  - Calcium
  - Sulphur
64. Deficiency symptoms of immobile nutrients will appear first in:
- Plant roots
  - Young, upper leaves
  - Older, lower leaves
  - Flowers

65. Blind hoeing is a kind of :
- Conservation tillage
  - Primary tillage
  - Secondary tillage
  - Zero-tillage
66. Seed dormancy due to hard seed coats can be broken by:
- Scarification
  - Mixing the seed in sand
  - Exposure of seed to sunlight
  - Soaking seed in water
67. Linseed is generally grown during \_\_\_\_\_ season in India.
- Kharif*
  - Rabi*
  - Zaid*
  - Pre-kharif*
68. Napier X Bajra hybrid is a cross between:
- Pennisetum purpureum X Pennisetum glaucum*
  - Pennisetum glaucum X Pennisetum americanum*
  - Pennisetum americanum X Pennisetum glaucum*
  - Pennisetum orientale X Pennisetum americanum*
69. The anaerobic condition under rice paddies does not influence which one of the following:
- The availability of several plant nutrients and soil pH
  - The production of toxic substances in the soil
  - Oxygen supply
  - Soil texture
70. The diploid (2n) chromosome number in pearl millet (Bajra) is:
- 8
  - 10
  - 12
  - 14
71. The average oil content in maize grain is:
- 4 %
  - 8%
  - 12%
  - 16%
72. The ratio of weight of unit volume of dry soil including pore spaces to weight of an equal volume of water is:
- Real specific gravity
  - Particle density
  - Wet bulk density
  - Apparent specific gravity

73. Water requirement of wheat generally varies between:
- 200-300 mm
  - 300-400 mm
  - 600-800 mm
  - 800-1000 mm
74. Which herbicide kills all types of weeds?
- Alachlor
  - 2, 4-D
  - Paraquat
  - Pendimethalin
75. Which one of the following plant nutrients helps in the synthesis of auxins?
- Copper
  - Manganese
  - Zinc
  - Phosphorus
76. Plants absorb nickel in the form of:
- $\text{Ni}^+$
  - $\text{Ni}^{2+}$
  - $\text{Ni}^{3+}$
  - $\text{Ni}^-$
77. Plant available potassium refers to:
- Exchangeable K plus soluble K
  - Exchangeable K
  - Solution K
  - Fixed K
78. In ammonium sulphate nitrate fertilizer, the ratio of ammonical-N and nitrate-N is:
- 50:50
  - 75:25
  - 25:75
  - 40:60
79. Ferrous sulphate-heptahydrate contains:
- 19% iron and 11% sulphur
  - 11% iron and 19% sulphur
  - 9% iron and 21% sulphur
  - 21% iron and 9% Sulphur
80. Leaf Colour Chart (LCC) indirectly tells us the status of:
- Nitrogen in rice plants
  - Phosphorus in rice plants
  - Sulphur in rice plants
  - Micronutrients in rice plants

81. Which one of the following statements is incorrect in case of surface retention of crop residues (mulching)?
- Thermo regulation of soils
  - Reduced evaporation
  - Increased water requirement of crops
  - Mitigate terminal heat
82. *Cyprus iria* belongs to the following group of weeds:
- Grassy weeds
  - Dicot weeds
  - Broad leaf weeds
  - Sedges
83. The best example of multistoried cropping is:
- Arhar + Sorghum
  - Wheat + Mustard
  - Gram + Lentil
  - Eucalyptus + Papaya + Berseem
84. Which one of the following statement/ option is correct about the crop rotation?
- The leguminous crop should be grown after leguminous crops
  - More exhaustive crops should be followed by highly exhaustive crops
  - Crops having shallow roots should be succeeded by deep-rooted crops
  - The crops of same botanical family should be grown continuously
85. The interspecific interaction when one species benefits and the other remains unaffected:
- Neutralism
  - Commensalism
  - Competition
  - Amensalism
86. Emergence of inflorescence (panicle) in sugarcane is referred as:
- Silking
  - Tillering
  - Shooting
  - Arrowing
87. The branches in cotton which bear fruits are called as:
- Monopodial branches
  - Unipodial branches
  - Lonepodial branches
  - Sympodial branches
88. The optimum time for sowing of cotton in north India is:
- Second fortnight of April to first fortnight of May
  - Second fortnight of May to first fortnight of June
  - Second fortnight of June to first fortnight of July
  - Second fortnight of July to first fortnight of August

89. Which one of the following varieties of potato is tolerant to frost?
- Kufri surya
  - Kufri jyoti
  - Kufri kanchan
  - Kufri sheetman
90. Which one of the following species of genus *Saccharum* is known as 'noble cane'?
- Saccharum barberi*
  - Saccharum officinarum*
  - Saccharum sinense*
  - Saccharum spontaneum*
91. The lower half portion of the sugarcane is not preferred for planting (sowing) as it:
- Contains less moisture and higher sucrose content, and matured internodes
  - Contains more moisture and lower sucrose content, and immature internodes
  - Contains younger undamaged buds without any covering of scales
  - Contains more buds per unit length of cane
92. Among the following crops, which crop has the highest percentage of irrigated area?
- Rice
  - Cotton
  - Green gram
  - Sugarcane
93. Which one of the following insect-pests affects sugarcane crop?
- Gurdaspur borer
  - Gujhia weevil
  - Gundhi bugs
  - Pink bollworms
94. *Trichoderma viride*, a bioagent to control some diseases in crop plants, acts as:
- Herbicide
  - Bactericide
  - Nematicide
  - Fungicide
95. *Trichogramma chilonis* can be used to control the:
- Stem borer of maize
  - Tikka disease of groundnut
  - Paddy blast
  - Loose smut of wheat
96. The most economical means of managing the 'tungro virus' disease in rice is:
- Spraying of nematicide
  - Spraying of fungicide
  - Spraying of bactericide
  - Growing of resistant varieties

97. 'Bakanae' disease in rice is caused by the fungus:
- a) *Ustilago nuda tritici*
  - b) *Puccinia graminis tritici*
  - c) *Gibberella fujikuroi*
  - d) *Pyricularia grisea*
98. Which one of the following strategies is not a part of Integrated pest and disease management in field crops?
- a) Growing of resistant varieties
  - b) Use of biological means or bio-agents
  - c) Use of biopesticides
  - d) Non-adoption of crop rotations
99. 'Phyllody' disease in sesamum is caused by:
- a) Virus
  - b) Nematode
  - c) Mycoplasma-like organism
  - d) Bacteria
100. White rust in mustard is caused by:
- a) *Peronospora brassicae*
  - b) *Alternaria brassicae*
  - c) *Albugo candida*
  - d) *Xanthomonas ricinicola*

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