महाराष्ट्र कृषी सेवा मुख्य परीक्षा- २०१२

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प्रश्नपुस्तिका क्रमांक

BOOKLET NO.

प्रश्नपुस्तिका

कृषि अभियांत्रिकी

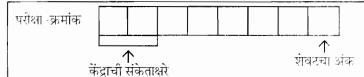एकूण प्रश्न : 200

वेळ : 2 (दोन) तास

एकूण गुण : 400

सूचना

(1) सदर प्रश्नपुस्तिकेत 200 अनिवार्य प्रश्न आहेत. उमेदवारांनी प्रश्नांची उत्तरे लिहिण्यास सुरुवात करण्यापूर्वी या प्रश्नपुस्तिकेत सर्व प्रश्न आहेत किंवा नाहीत याची खात्री करून घ्यावी. असा तसेच अन्य काही दोष आढळल्यास ही प्रश्नपुस्तिका समवेक्षकांकडून लगेच बदलून घ्यावी.

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

परीक्षा - क्रमांक

↑ केंद्राची संकेताक्षरे   ↑ शेवटचा अंक

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

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

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

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

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

ताकीद

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

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

पुढील सूचना प्रश्नपुस्तिकेच्या अंतिम पृष्ठावर पहा

पर्यवेक्षकांच्या सूचनेविना ही सील उघडू नये

FO2

A

SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK

1. Complete the following sentence meaningfully.

   The pressure or head developed by a given centrifugal pump in a sprayer at a particular speed is a function of _____.

   (1) Pump capacity   (2) Total head

   (3) Spray volume   (4) Discharge rate

2. At what temperature standard thermostat valves are designed to fully open ?

   (1) 70°C   (2) 75°C   (3) 85°C   (4) 82°C

3. How much is the air compressed in a compression stroke of 4 stroke diesel engine ?

   (1) 1/6th of engine volume   (2) 1/5th of engine volume

   (3) 1/10th of engine volume   (4) 1/12th of engine volume

4. Where are the centrifugal governors very common ?

   (1) carburator engine   (2) stationary engine

   (3) gas engine   (4) both (1) and (2) above

5. What type of furrow openers are widely used in seed drills ?

   (1) shovel   (2) shoe   (3) single disc   (4) double disc

6. What are the essential spare parts of the duster to be kept in stock ?

   (a) Agitator   (b) Feeding brush

   (c) Breast plate   (d) Feed control lever

   (1) (a) and (b)   (2) (a), (b) and (c)

   (3) (a), (b) and (d)   (4) all of these above

7. What type of seed metering mechanism is common on British seed drills ?

   (1) fluted feed   (2) internal double run

   (3) cup feed   (4) star wheel

8. What is the power actually required to pull or move the implement at a uniform speed, in relation to either a pull type or a mounted implement known as ?

   (1) Horse power   (2) Pto power

   (3) Drawbar power   (4) Hydraulic power

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9. What is the force that holds two particles of the soil of the same kind together ?

   (a) adhesion   (b) cohesion

   (c) internal friction   (d) shearing stress

   Which of the above options is/are correct ?

   (1) (c) and (d) only   (2) (a) only

   (3) (c) only   (4) (b) only

10. What is dropping of the seeds in furrow lines in a continuous flow and covering them with soil called ?

    (1) drilling   (2) dibbling   (3) broad casting   (4) none of these

11. Fill in the blank correctly.

    Fan - spray and hollow - cone nozzles employed on boom - type field sprayers generally have spray angles (i.e. included angle of the cone or fan) of _____.

    (1) 60 to 95°   (2) 100 to 150°   (3) 30 to 45°   (4) 10 to 30°

12. How many man hours are required to harvest one hectare of paddy crop ?

    (1) 170 - 200   (2) 170 - 190

    (3) 190 - 210   (4) None of the above

13. Which type of brake is used in most of the power tiller ?

    (1) Outer side expansion type   (2) Inner side expansion type

    (3) Both side expansion type   (4) None of the above

14. What does pneumatic tyre consist of ?

    (a) Breakers   (b) Casing   (c) Beads   (d) Plies

    (1) only (b)   (2) (a), (b) and (c)

    (3) (b) and (d)   (4) all of these

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15. Complete the following sentence meaningfully :

In I.C. engine Tappet clearance is the clearance between :

(a) Rocker arm and push rod

(b) Tappet and the cam

(c) Valve head and the piston head

(d) Rocker and valve stem

Which of the above is/are correct ?

(1) (a) and (b) (2) (d) only (3) (b) only (4) (c) only

16. Fill in the blank with the correct option.

In rotary dusters, the handle should be cranked at _____ revolutions per minute for efficient performance.

(1) 15 - 20 (2) 30 - 35 (3) 45 - 50 (4) 10 - 15

17. What is the working capacity of wheel hoe per day per man ?

(1) 0.04 ha (2) 0.05 ha (3) 0.06 ha (4) 0.65 ha

18. What hitching system connects mounted implements to a tractor ?

(1) Drawbar (2) PTO shaft

(3) 2 lower links (4) 3 point linkage

19. Which of the following affects the tractive efficiency ?

(1) slope of land (2) hitch height

(3) shape and size of lugs (4) all the above

20. The few adjustments for obtaining higher penetration of the disk harrow in the field are :

(a) By decreasing the disk angle

(b) By adding additional weight on the harrow

(c) By increasing the disk angle

(d) By using the sharp edged disks of small diameter and lesser concavity

Which of the above statements is/are correct ?

(1) (a) and (b) only (2) (b), (c) and (d) only

(3) (a) only (4) (a) and (d) only

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21. In what type of fuel injection pump, one pump serves as a nozzle for several cylinders ?

   (1)   Jerk pump   (2)   Distributor pump

   (3)   In line jerk pump   (4)   Unit injector

22. Fill in the blank aptly :

   The rate of circulation of the water in a water pump in forced circulation water cooling system should not be less than _____.

   (1)   5 l/BHP/min.   (2)   0.5 l/BHP/min.

   (3)   15 l/BHP/min.   (4)   0.1 l/BHP/min.

23. What converts the reciprocating motion of piston into rotary motion of flywheel ?

   (1)   Piston rings   (2)   Connecting rod (3)   Crank shaft   (4)   Cam shaft

24. What type of cultivator is suitable to operate in stony, stumpy, hard soil having roots as obstacles in the adverse field condition ?

   (1)   Spring loaded tines   (2)   Rigid tines

   (3)   Duck foot   (4)   None of these

25. What serves as a pulse transformer that transforms or steps up the low voltage to high voltage necessary to jump across gaps at spark plugs ?

   (1)   Ignition coil   (2)   Condenser   (3)   Distributor   (4)   Generator

26. Which of the following tests is not an essential test of tractors ?

   (1)   Centre of gravity   (2)   Turning circle

   (3)   Noise measurement   (4)   Drawbar test

27. In tractors how is the weight transfer expressed as ?

   (1) $\dfrac{\text{pull} \times \text{hitch height}}{\text{wheel base}}$ (2) $\dfrac{\text{pull} \times \text{wheel base}}{\text{hitch height}}$

   (3) $\dfrac{\text{pull}}{\text{wheel base}}$ (4) $\dfrac{\text{pull} - \text{hitch height}}{\text{wheel base}}$

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28. Which brake system is based on the principle of Pascal's law ?

(1) Disc brake (2) Internal expanding shoe brake

(3) External contracting shoe brake (4) Hydraulic brake

29. What is the specific draft requirement of tandom disc harrow ?

(1) 3.6 to 5.8 KN/cm^2 (2) 6 to 9 KN/cm^2

(3) 9 to 12 KN/cm^2 (4) 12 to 15 KN/cm^2

30. To what volume is a tank filled with liquid in compression sprayers ?

(1) 3/4th volume (2) half capacity (3) 2/3rd volume (4) top level

31. Spraying pattern of nozzles used in high pressure high volume sprayer is of _____ pattern.

(1) cone shape (2) round shape (3) square shape (4) oval shape

32. Engine fails to develop full power because of :

(a) Air cleaner clogged (b) Poor compression

(c) Overheated engine (d) Cylinders misfiring

(1) only (c) (2) (a), (b) and (c)

(3) (a) and (c) (4) All of these

33. Fill in the blank correctly.

A clutch pedal moves freely for short distance before it begins to pull clutch plates apart this distance is called "Free travel", which may vary between _____ mm.

(1) 10 - 15 (2) 12 - 50 (3) 52 - 60 (4) 70 - 80

34. What is the grain damage by thresher due to ?

(1) less clearance between cylinder and concave

(2) very dried crop

(3) high speed rate

(4) none of the above

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35. What does the duster essentially consist of to apply chemicals in dust form on the plants ?

    (a)   Hopper, pressure gauge, pump, hollow cone nozzle and strainer

    (b)   Hopper, agitator, feed control, blower and pump

    (c)   Hopper, agitator, feed control, blower and delivery nozzle

    (d)   Hopper, pump, agitator, blower and flat fan nozzle

    Which of the above is/are correct ?

    (1)   (a) and (b) only   (2)   (d) only

    (3)   (c) only   (4)   none of the above

36. The clearance between what is the clutch free play related with ?

    (1)   The release bearing and clutch plates

    (2)   The release bearing and the sturt

    (3)   The release bearing and the spring

    (4)   The release bearing and the fingers

37. What are three main forces or force systems that must be in equilibrium to which a tillage implement moving at a constant velocity is subjected ?

    (a)   Gravity forces, soil forces and forces acting between implement and prime mover

    (b)   Soil forces only

    (c)   Gravity forces, soil forces and forces acting between implement and soil

    (d)   Soil forces and forces acting between implement and soil

    Which of the above statements is/are correct ?

    (1)   (b) only   (2)   (a) only

    (3)   (c) and (d) only   (4)   (b) and (c) only

38. Which is a direct solid injection system of fuel injection ?

    (1)   common rail system   (2)   air injection system

    (3)   fuel pressure system   (4)   no rail system

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39. What are the three types depending upon the types of notches on the seed metering plates in a planter ?

(a) cell drop, flat drop and hill drop

(b) seed drop, cell drop and hill drop

(c) seed drop, flat drop and cell drop

(d) flat drop, edge drop and hill drop

Which of the above statements is/are correct ?

(1) (a), (b) and (c) only   (2) (c) only

(3) (d) only   (4) (b) only

40. What is achieved by calibration of the seed drill ?

(a) correct depth of seed in the soil

(b) correct distance between the rows drilled

(c) correct seed rate per hectare of crop

(d) correct speed of sowing the seed

Which of the above statements is/are correct ?

(1) (a) and (d) only   (2) (b) only

(3) (c) only   (4) (d) only

41. On the basis of what characteristics a specific gravity seed separator is used for grading the seed ?

(1) same size but different specific gravity

(2) same size and same specific gravity

(3) different size and different specific gravity

(4) different size but same specific gravity

42. Where does spoilage of grains in summer conditions take place ?

(1) Top of the bin   (2) Bottom of the bin

(3) Side of the bin   (4) All of the above

43. What is the destruction of all micro - organisms in food material by thermal processing known as ?

(1) Pasteurization   (2) Sterilization   (3) Blanching   (4) Scalding

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P.T.O.

44. What is the characteristic of milled rice obtained from parboiled paddy compared to raw rice ?

    (1)   is whiter and contains more vitamin B_1

    (2)   require less cooking time and contains more vitamin B_1

    (3)   gives higher head yield and contains more vitamin B_1

    (4)   has more oil in bran and contains less vitamin B_1

45. What sublimes (off) the watervapour from frozen food ?

    (1)   Contact drying   (2)   Vacuum drying

    (3)   Freeze drying   (4)   All of the above

46. For high capacities and fairly cheap means of vertical conveyance of grains, which type of material handling device is commonly used ?

    (1)   Belt conveyor   (2)   Bucket elevator

    (3)   Screw conveyor   (4)   Pneumatic conveyor

47. What is the difference between dry bulb temperature and wet bulb temperature called ?

    (1)   Dry bulb depression   (2)   Wet bulb depression

    (3)   Dew point depression   (4)   Degree of saturation

48. What is the shape of perforated deck of specific gravity separator ?

    (1)   Triangular   (2)   Rectangular   (3)   Circular   (4)   Hexagonal

49. If the fruits are having egg shape and are broad at the stem end, they have _____ shape.

    (1)   oblate   (2)   oblong   (3)   ovate   (4)   obovate

50. What is the ratio of diameter of the largest inscribed circle to diameter of the smallest circumscribed circle called ?

    (1)   Roundness   (2)   Sphericity

    (3)   Roundness ratio   (4)   None of the above

51. Which storage structure is used as transit storage and serves the purpose of storage of food grains for a short period ?

    (1)   Bunker storage   (2)   Bukhari storage

    (3)   Pusa bin storage   (4)   CAP storage

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52. What can achieve concentration of highly heat sensitive material ?

    (1) Vertical tube evaporator   (2) Horizontal tube evaporator

    (3) Falling film evaporator   (4) Plate evaporator

53. What indicates the relative proportions of the coarse, medium and fine particles ?

    (1) Fineness modulus   (2) Uniformity index

    (3) Average particle size   (4) Effectiveness

54. What is the maximum degree of inclination from horizontal upto which a screw conveyor can be used ?

    (1) 5   (2) 10   (3) 15   (4) 20

55. What is the amount of steam consumed to evaporate 1 kg of water from food in a drum dryer ?

    (1) 0.3 kg   (2) 1.3 kg   (3) 3.0 kg   (4) None of these

56. At what speed do hammers rotate in a Hammer Mill ?

    (1) 1200 to 7000 rpm   (2) 1500 to 4000 rpm

    (3) 1000 to 1500 rpm   (4) 700 to 1000 rpm

57. In milk processing, homogenizer is used to reduce the fat globules size to :

    (1) Less than 2 millimetres   (2) Less than 20 millimetres

    (3) Less than 2 microns   (4) None of the above

58. Match the following :

    (A) Deep bin design   (i)   Moisture accumulation at bottom

    (B) Shallow bin design   (ii)   Moisture accumulation at top

    (C) Winter moisture migration   (iii) Rankines theory

    (D) Summer moisture migration   (iv) Janssen's Equation

         (A)   (B)   (C)   (D)
    (1) (iii)   (iv)   (i)   (ii)
    (2) (iii)   (iv)   (ii)   (i)
    (3) (iv)   (iii) (i)   (ii)
    (4) (iv)   (iii) (ii)   (i)

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59. Complete the sentence correctly.

The spiral separator separates the grains as per their _____.

(1) Size   (2) Shape   (3) Roundness   (4) Sphericity

60. Fill in the blank correctly.

The Equilibrium moisture content is determined at constant relative humidity and _____ conditions of air.

(1) pressure   (2) volume

(3) temperature   (4) None of the above

61. In a body when stress is directly proportional to strain, what is the relationship known as ?

(1) Newton's law   (2) Hook's law

(3) Kelvin model   (4) Maxwell model

62. Which equation can estimate the average particle size, DP in mm represented in terms of fineness modulus [F.M.] ?

(1) $DP = 0.135 \, [1.366]^{F.M.}$ (2) $DP = 0.135 \, [3.166]^{F.M.}$

(3) $DP = 0.315 \, [1.366]^{F.M.}$ (4) $DP = 0.315 \, [3.166]^{F.M.}$

63. At what relative humidity, the dry bulb temperature, wet bulb temperature and dew point temperature of moist air are the same ?

(1) 1 percent   (2) 50 percent

(3) 100 percent   (4) Difficult to predict

64. What is the number of molecular weight of solute expressed in kg in 1 m^3 of solution ?

(1) Molar concentration   (2) Mole fraction

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

65. What will be the moisture content on dry basis if the moisture content of paddy on wet basis is 20% ?

(1) 20%   (2) more than 20%

(3) less than 20%   (4) none of the above

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66. What is the removal of foreign and undesirable matter from the desired products called as ?

(1) washing   (2) cleaning   (3) sorting   (4) scalping

67. $\dfrac{M - Me}{Mo - Me}$ is known as _____

where,   M = Moisture content, % (db)

Me = EMC, % (db)

Mo = Initial Moisture Content, % (db)

(1) Critical moisture content   (2) Moisture ratio

(3) Equilibrium moisture content   (4) Drying rate

68. Complete the sentence.

A stream of product to be dried is very finely atomized in a stream of hot air is a general principle of _____.

(1) Vacuum dryer   (2) Spray dryer

(3) Tray dryer   (4) All of the above

69. Fill in the blank with the appropriate option.

In homogenization process _____ of milk increases with increasing homogenizing pressure.

(1) Viscosity   (2) Total soluble solids

(3) Acidity   (4) pH

70. What is the most commonly used refrigeration system now a days ?

(1) Vapour compression refrigeration

(2) Vapour absorption refrigeration

(3) Electrolux refrigeration

(4) Steam jet refrigeration

71. What reduces the size of food grain in an attrition mill ?

(1) Impact and shear   (2) Crushing and shear

(3) Impact and crushing   (4) Impact only

SPACE FOR ROUGH WORK

72. Fill in the blank with the correct option.

    During a refrigeration cycle, heat is rejected by a refrigerant in a _____.

    (1) compressor   (2) condenser

    (3) evaporator   (4) expansion device/valve

73. What is the cheapest conveying equipment to convey bulk grains over large distance ?

    (1) Belt conveyor   (2) Screw conveyor

    (3) Bucket elevator   (4) Pneumatic conveyor

74. How are the equilibrium moisture curves or grain isotherms generally ?

    (1) S - shaped   (2) L - shaped   (3) Straight line   (4) V - shaped

75. What is the meaning of equilibrium moisture content ?

    (1) The moisture content of the centre of the product when it is in equilibrium with the surface.

    (2) The moisture content of the product when it is in equilibrium with the surrounding atmosphere.

    (3) The moisture content of the product when it is less than surrounding atmosphere.

    (4) The moisture content of the product when it is higher than surrounding atmosphere.

76. What requires high power and may cause damage to conveyed material ?

    (1) Chain conveyor   (2) Pneumatic conveyor

    (3) Belt conveyor   (4) Screw conveyor

77. How does the screw conveyor generally move the grains ?

    (1) Vertically   (2) Horizontally

    (3) Inclined   (4) None of the above

78. Fill in the blank with the correct option.

    Centrifugal discharge is used extensively for handling small grains in _____ .

    (1) belt conveyor   (2) chain conveyor

    (3) screw conveyor   (4) bucket elevator

SPACE FOR ROUGH WORK

79. $1 - RH = e^{-CTM_e^n}$ what equation is this ?

Where, RH = Relative Humidity, decimal;

T = Absolute temperature, $^{\circ}$K;

Me = Equilibrium moisture content, % (db) C and n = constant

(1) BET equation
(2) Gibb's equation
(3) Baker and Arkema equation
(4) Henderson's equation

80. What does the constant rate drying period depend on ?

(a) Area exposed.

(b) Difference in humidity between air and wet surface.

(c) Coefficient of mass transfer.

(d) Velocity of drying air.

(1) only (a) and (b)
(2) only (a) and (c)
(3) only (d)
(4) (a), (b), (c) and (d)

81. The Khadi Village Industries Commission (KVIC) biogas model is of which type ?

(1) FRP biogas plant
(2) Floating gas holder
(3) Fixed dome digester
(4) Mobile biogas plant

82. Which instrument is used to measure the direct and diffused radiation in terms of energy per unit time per unit area on horizontal surface ?

(1) Thermometer
(2) Pyranometer
(3) Anemometer
(4) Sun shine recorder

83. From what can biogas be produced ?

(a) Cow dung
(b) Poultry droppings
(c) Plant garbage
(d) Flesh of carcasses

(1) (a) and (b)
(2) (a) only
(3) (a), (b) and (c)
(4) all of these

SPACE FOR ROUGH WORK

84. Fill in the blank correctly.

Step-up transformer receives energy at one voltage and delivers it at a _____ voltage.

(1)   Lower   (2)   Higher   (3)   Same   (4)   Zero

85. What is a universal motor ?

(1)   is available universally

(2)   can be marketed internationally

(3)   can be operated either on dc or ac supply

(4)   runs at dangerously high speed on no load

86. What are the steps as per generally recognized strategy for site selection of wind mill installations ?

(a)   Survey of historical wind data is done.

(b)   Contour maps of terrain and wind are consulted.

(c)   Potential sites are instrumented for approximately one year.

(d)   Optimal site is chosen.

(1)   (a), (b) and (d)   (2)   (a) and (d)

(3)   (a), (c) and (d)   (4)   (a), (b), (c) and (d)

87. How many fold increase in the available wind power will there be, if the diameter of a rotor of horizontal axis wind mill is doubled ?

(1)   2   (2)   4   (3)   6   (4)   8

88. Complete the sentence.

The surface azimuth angle (γ) varies from _____.

(1) $0°$ to $180°$ (2) $-180°$ to $270°$ (3) $-180°$ to $180°$ (4) $-180°$ to $360°$

89. What is the calorific value of biogas in kcal per cubic meter ?

(1)   3000   (2)   3700   (3)   4700   (4)   5500

90. What is the range of voltage applied to the electrical fence ?

(1)   6000 to 15000 volts pulsating   (2)   6000 to 15000 volts continuous

(3)   1000 to 6000 volts pulsating   (4)   1000 to 6000 volts continuous

SPACE FOR ROUGH WORK

91. What for is a fuse provided for electric circuit ?

    (1) safe - guarding the circuit against heavy current

    (2) decreasing current flowing in a circuit

    (3) increasing current flowing in a circuit

    (4) decreasing power consumption in a circuit

92. Fill in the blank.

    In fixed dome type biogas plant, gas availability is at _____ pressure.

    (1) Atmospheric　(2) Constant　(3) Variable　(4) None of these

93. Which of the following is not a part of flat plate solar collectors ?

    (1) Transparent cover　　(2) Absorber plate

    (3) Insulation　　(4) Heliostat

94. India is having about 10 million motors with average rating of 3.7 kW. If the efficiency is increased from 80% to 90%, how much power will be saved per year, considering annual use of 1000 hrs ?

    (1) 2.96 billion kWh　　(2) 4.62 billion kWh

    (3) 5.14 billion kWh　　(4) 0.9 billion kWh

95. Wind mill operated piston pump is suitable for which form of irrigation ?

    (a) well　(b) bore hole　(c) dam　(d) river

    (1) (a) and (b)　　(2) (c) and (d)

    (3) (a), (c) and (d)　　(4) all the above

96. Fill in the blanks appropriately.

    Wind speed _____ with height; at the height of 10 m was found to be _____, than that close to the ground.

    (1) increase ; 5 - 10% higher　　(2) decrease ; 5 - 10% lower

    (3) increase ; 20 - 25% higher　　(4) decrease ; 20 - 25% lower

SPACE FOR ROUGH WORK

97. Fill in the blank correctly.

Methane bacteria work best at a temperature range of _____ for optimum biogas production.

(1)   10 - 20°C   (2)   35 - 38°C   (3)   5 - 15°C   (4)   40 - 50°C

98. Which of the following are the direct or indirect applications of solar energy ?

(a)   Solar water heating   (b)   Space cooling

(c)   Wind energy   (d)   Solar cooking

(1)   (a) only   (2)   (a) and (d)

(3)   (a), (c) and (d)   (4)   all of above

99. What is the major obstacle to increase the use of solar irrigation systems ?

(1)   It cannot be operated in rainy season

(2)   Relatively high capital cost

(3)   Relatively high operational cost

(4)   Pumping may be intermittent

100. What is the relative requirement of the Savonius rotor machine due to which it has become popular, since operation ?

(1)   high velocity wind   (2)   low velocity wind

(3)   low maintenance   (4)   moderate velocity wind

101. What type of windows are provided on the sloping surface of a pitched roof ?

(1)   Clerestorey   (2)   Bay   (3)   Lantern   (4)   Sky lights

102. Fill in the blank with a correct option.

A king post truss is suitable for roofs of span varying from _____ .

(1)   2 m to 5 m   (2)   5 m to 8 m   (3)   8 m to 11 m   (4)   12 m to 15 m

103. Which flooring material is used in the parquet flooring ?

(1)   Magnesite   (2)   Asphalt   (3)   Timber   (4)   Plastic

104. How much percentage of photosynthetically active radiation is transmitted on an average into the greenhouse by UV stabilized polythelene ?

(1)   57   (2)   67   (3)   77   (4)   87

SPACE FOR ROUGH WORK

105. In green house cultivation, temperature at which plant can grow depends upon ?

(1) Species   (2) Radiant energy

(3) Carbon dioxide concentration   (4) All of these

106. What is the solid ground on which the foundations rest called ?

(1) Footing   (2) Plinth

(3) Foundation bed   (4) Super - structure

107. Fill in the blank with one of the options given below.

The doors should preferably be located near the corner of a room, at a distance of about _____ mm from the corner.

(1) 300   (2) 250   (3) 200   (4) 150

108. What tests the soundness of cement ?

(1) Air permeability method   (2) Le - chatelier method

(3) Vicat's apparatus   (4) All of the above

109. In which case is the service life of green house covering material highest ?

(1) Acrylic sheet

(2) Polycarbonate sheet

(3) Fibre glass reinforced plastic panels

(4) Polyethylene sheet

110. Fill in the blank with the appropriate option.

The crushing strength of a good structural stone should be greater than _____ N/mm^2.

(1) 100   (2) 75   (3) 50   (4) 25

111. What is the minimum clearance required between the bottom of a vertically driven turbine type pump and the floor of the jack well ?

(1) 1 m   (2) 1.5 m   (3) 2 m   (4) 2.5 m

112. What is the recommended safe land slope in heavy (clay) soils for land levelling to have efficient irrigation ?

(1) 0.20 to 0.40%   (2) 0.25 to 0.60%   (3) 0.05 to 0.20%   (4) 0.50 to 0.70%

SPACE FOR ROUGH WORK

113. If H is the head of water above the V - notch, then the rate of flow through V - notch varies as :

(1)   H   (2) $\sqrt{H}$ (3) $H^{3/2}$ (4) $H^{5/2}$

114. What should be the hypothetical discharge of 10 HP pump working at the efficiency of 75% and at the head of 75 m ?

(1)   10 lit/sec   (2)   12.50 lit/sec   (3)   7.50 lit/sec   (4)   15 lit/sec

115. The formula $Q = 0.61 \times 10^{-3}$ a $\sqrt{2.gh}$ is used to find discharge through circular orifice under free flow condition. Here, h is expressed as :

(1)   Vertical distance between bottom of channel and top of floor.

(2)   Difference between upstream and downstream water level.

(3)   Vertical distance between bottom of orifice and top of flow.

(4)   Vertical distance between centre of orifice and top of flow.

116. What is the most appropriate mechanically operated equipment for the fine grading of small and medium size fields ?

(1)   bull dozer   (2)   two wheeled automatic leveller

(3)   carrier type scrapper   (4)   wooden float

117. What must be the depth of the tile lines for the usual channels serving as outlets ?

(1)   0.60 m or less   (2)   always 0.90 m

(3)   1.2 m or more   (4)   3.0 m or more

118. What is the pressure drop usually allowed in a media filter ?

(1)   1 m   (2)   2 m   (3)   3 m   (4)   4 m

119. The pressure head in a sprinkler system is converted into velocity head at :

(1)   the sprinkler head   (2)   the sprinkler jet

(3)   the nozzle   (4)   the riser

120. How are the constantly flowing wells due to high hydrostatic pressure within confined aquifers classified as ?

(1)   Pearched wells   (2)   Piezometric wells

(3)   Sinking wells   (4)   Artesian wells

SPACE FOR ROUGH WORK

121. Drainage channel discharges 0.1 cubic metres of water per second and drains 360 hectares, what is the drainage coefficient of this land ?
    (1) 2.4 mm   (2) 4.9 mm   (3) 9.9 mm   (4) 5.9 mm

122. What will be the formation level of upper and lower grid from centroid in the following case ?
    (i)   centroid = 100 m
    (ii) slope = 0.2%
    (iii) Grid distance = 30 m
    (1) 100.30 m and 99.70 m   (2) 100.60 m and 99.94 m
    (3) 101.20 m and 98.80 m   (4) 103.00 m and 97.00 m

123. What is the method of land levelling design ; restricted to those fields where it is feasible to grade the field to a true plane ?
    (1) plane method   (2) profile method
    (3) plan inspection method   (4) contour adjustment method

124. Which equation gives the leaching requirement for the salt affected soil ?
    (1) $\dfrac{Dd}{Di}$ (2) $\dfrac{ECd}{ECi}$ (3) $\dfrac{Di}{Dd}$ (4) $\dfrac{ECi}{ECe}$

125. What is the line which gives the sum of pressure head and datum head of a flowing fluid in a pipe with respect to some reference line, known as ?
    (1) total energy line   (2) datum line
    (3) hydraulic gradient line   (4) reference line

126. What is the ratio between the actual velocity of a jet of liquid at vena - contracta and the theoretical velocity of jet, called ?
    (1) coefficient of friction   (2) coefficient of discharge
    (3) coefficient of contraction   (4) coefficient of velocity

127. How is the safe agricultural area categorised as per the working group on problem identification in irrigated areas constituted by the Ministry of Water Resources Govt. of India (MOWR 1991) ?
    (1) Water table touching the land surface.
    (2) Water table between 2 to 3 m from land surface.
    (3) Water table below 3.0 m from land surface.
    (4) Water table within 2.0 m from land surface.

SPACE FOR ROUGH WORK

128. What is generally the diameter of observation wells for pumping tests of wells ?

   (1)   less than 2.5 m   (2)   ranging between 2.5 to 5 cm

   (3)   more than 5 cm   (4)   about 30 cm

129. What is the relationship between duty (D), delta (Δ) and base period (B) ?

   (1) $\Delta = \dfrac{8.64\ B}{D}$ m, if B in days and D in ha

   (2) $\Delta = \dfrac{8.64\ D}{B}$ m, if B in days and D in ha

   (3) $\Delta = \dfrac{27.78}{T}$ (B × D) m, if B in days, D in ha and T pump working hrs per day

   (4) $\Delta = \dfrac{D \times B}{8.64 \times 2h \times 3600}$ if B in days, D in ha

130. Complete the following sentence meaningfully.

   Flow through channel is said to be steady, when velocity of flow is :

   (1)   constant at point over length   (2)   constant at point over time

   (3)   varying at point over length   (4)   varying at point over time

131. What is the condition for the trapezoidal channel section to be most economical ?
   (m = hydraulic mean depth and d = depth of fluid)

   (1) $m = \dfrac{d}{2}$ (2) $d = \dfrac{m}{2}$ (3) $m = \dfrac{d}{4}$ (4) $d = \dfrac{m}{4}$

132. Where the gravel filter and the base material are more or less uniformly graded for gravel envelope, without a lack or excess of certain particle sizes, a filter stability ratio is generally safe, when it is ?

   (1)   less than 5   (2)   more than 5   (3)   more than 7   (4)   none of these

133. Which of the following components of canal system is supposed to be maintained by farmer ?

   (1)   Distributory   (2)   Water course   (3)   Minor   (4)   Branch canal

SPACE FOR ROUGH WORK

134. What for are propeller pumps specifically adopted ?
    (1)   low head and high discharge operations
    (2)   high head and low discharge operations
    (3)   high head and high discharge operations
    (4)   low head and low discharge operations

135. At what flexibility the canal outlet is known to be hyper proportional ?
    (1)   equal to unity   (2)   less than unity
    (3)   greater than unity   (4)   none of these

136. What is the structure known as when the HFL of the drain is sufficiently below the bottom
    of the canal so that the drainage water flows freely under gravity ?
    (1)   syphon aqueduct   (2)   canal syphon
    (3)   aqueduct   (4)   super passage

137. What does duty of any crop signify ?
    (1)   it is a discharge in cumec released over base period.
    (2)   it is a period in days for which one cumec discharge is released.
    (3)   it is an area in hectares irrigated by one cumec discharge released continuously for
          base period for that particular crop.
    (4)   it is discharge in cumec required to be released for 100 ha area for that particular
          crop.

138. What is the suction limit of a centrifugal pump ?
    (1)   10 m   (2)   21 m   (3)   6 m   (4)   35 m

139. What are the characteristics of shallow tube wells ?
    (1)   high capacity and depth more than 35 m
    (2)   low capacity and depth less than 35 m
    (3)   high capacity and depth between 60 - 300 m
    (4)   low capacity and depth between 60 - 300 m

140. Which one of the following equations is used to determine the velocity of flow V, where
    L = distance, m ; K = hydraulic conductivity, m/day ; $(h_1 - h_2)$ = elevation difference in
    water table, m ?

    (1) $V = \dfrac{K(h_1 - h_2)}{L}$, m/day   (2) $V = \dfrac{K.L}{(h_1 - h_2)}$, m/day

    (3) $V = \dfrac{L(h_1 - h_2)}{K}$, m/day   (4) $V = \dfrac{K(h_1 - h_2)}{L}$, m/sec

SPACE FOR ROUGH WORK

141. What is the stream which becomes dry soon after the end of rainstorm referred as ?

(1) intermittent stream

(2) perennial stream

(3) ephemeral stream

(4) influent stream

142. Which of the following is the economic flood control structure in the earthen dike like form ?

(1) Retarding basins

(2) Close conduits

(3) Retaining walls

(4) Levees

143. What is the remedial measure of controlling reservoir sedimentation that becomes economically impracticable ?

(1) removal of sediment deposit

(2) control of sediment inflow

(3) design of reservoir

(4) watershed erosion control

144. Which one is the common suspended load sampler ?

(1) Pumping sampler

(2) Core sampler

(3) Width sampler

(4) Open sampler

145. How is the weighing factor defined as, in Thissen polygon method of determination of average precipitation over an area ?

(1) $\dfrac{\text{Polygon area}}{\text{Total area}}$

(2) Polygon area $\times$ Total area

(3) $\dfrac{\text{Total area}}{\text{Polygon area}}$

(4) $\dfrac{\text{Point rainfall}}{\text{Average rainfall}}$

146. What is the capacity of each compartment of tipping bucket type raingauge ?

(1) 0.20 mm rainfall depth

(2) 0.25 mm rainfall depth

(3) 0.30 mm rainfall depth

(4) 0.50 mm rainfall depth

147. The 3 : 1 and 4 : 1 side slopes towards upstream and downstream, respectively should be provided to earthen dam for which type of soils ?

(1) Well graded soil

(2) Average quality fill material

(3) Relatively coarse fill material

(4) Coherent soil

SPACE FOR ROUGH WORK

148. What is the value/range of moderate intensity based on the falling rate of rainfall ?

(1) 2.5 mm/h

(2) 2.5 to 7.5 mm/h

(3) 7.5 to 15.0 mm/h

(4) 15.0 to 22.0 mm/h

---

149. When isolated bodies of resistant rock from prominent hills are found above the subdued surface, which phase occurs ?

(1) Inequilibrium (2) Equilibrium (3) Hypsometric (4) Monadnock

---

150. What is the value of bifurcation ratio if, the number of streams of order u are 15 and order u + 1, are 4 ?

(1) 0.27 (2) 0.72 (3) 0.75 (4) 3.75

---

151. In what form the relationship between rainfall and runoff for large catchments exists ?

(1) linear

(2) logarithmic

(3) exponential

(4) none of the above

---

152. Which shape of grassed waterway amongst the following is hydrologically more efficient and easy to construct ?

(1) Triangular (2) Trapezoidal (3) Half - circle (4) Parabolic

---

153. In which soils will the soil erosion be highest ?

(1) soil under cultivated crop

(2) soil surface covered by plant canopy

(3) soil surface under grass cover

(4) soil surface under forest cover

---

154. What is the term for lines joining all prints in a basin by some key time elements in a storm ?

(1) Isobaths (2) Isobars (3) Isochrones (4) Isohyetes

---

155. As per the FAO 1965 recommendation, what should be the width for wind - strip cropping for sandy loam soil ?

(1) 6 m (2) 85 m (3) 30 m (4) 105 m

---

156. Watersheds A and B have same area, but A has greater stream density than that of B. Which watershed will yield higher peak runoff ?

(1) A

(2) B

(3) A and B equally

(4) None of the above

SPACE FOR ROUGH WORK

157. When will the width of bench terrace be more, for a predetermined depth of cut ?
    (1)   when batter slope is 0.5 : 1   (2)   when batter slope is 1 : 1
    (3)   when batter slope is 2 : 1   (4)   when batter is vertical

158. What should be the non - erodible velocity for sandy soils ?
    (1)   0.25 m/s   (2)   0.50 m/s   (3)   0.75 m/s   (4)   1.0 m/s

159. In general, what should be the maximum limit for a continuous terrace length, provided that the terrace should carry the runoff in only one direction.
    (1)   400 tc 500 m   (2)   600 to 800 m
    (3)   0.8 to 1 km   (4)   200 to 400 ft

160. What is the value of constant of channel maintenance if, the drainage density of basin is 0.005 m/m² ?
    (1)   100 m   (2)   200 m   (3)   300 m   (4)   400 m

161. Fill in the blank with the appropriate option.
    Side slope in contour and graded bund is designed on the basis of _____.
    (1)   bund height   (2)   bund base width
    (3)   slope of seepage line   (4)   angle of repose of soil

162. Why is soil loss estimation equation referred as 'universal soil loss equation' ?
    (1)   Its validity is more
    (2)   It is universally adopted
    (3)   It accounts for all parameters affecting soil erosion
    (4)   It is developed by USDA

163. What is the erodibility factor if, the adjusted soil loss and R, factor become 80 tonnes/ha and 800 units respectively ?
    (1)   1.0   (2)   1.10   (3)   0.10   (4)   10.0

164. For a storm of any given duration with large return period, what will its intensity be ?
    (1)   zero   (2)   smaller   (3)   larger   (4)   equal

165. What is the horizontal distance between the graded terraces, if the land slope is 5% ?
    (1)   40 m   (2)   30 m   (3)   10 m   (4)   50 m

SPACE FOR ROUGH WORK

166. What is the value of mean areal rainfall using Theissen polygon method ?

Station	A	B	C
Rainfall (cm)	10	15	20
Polygon area (km²)	50	100	50

(1) 13 cm   (2) 14 cm   (3) 15 cm   (4) 16 cm

167. What can effectively protect a stream bank when a stream takes sharp bend and bed scour is not deep and vertical ?
(1) Brush wood rollers   (2) Brush wood edging
(3) Spur dikes   (4) Wooden Jack series

168. The maximum slope length of 35 m is restricted in case of contour farming for the land having how much percent slope ?
(1) 9 to 12   (2) 13 to 16   (3) 6 to 8   (4) 3 to 5

169. As per the WMO recommendations, in flat regions of temperate, mediterranean and tropical zones, in ideal conditions one raingauge should cover how much of an area ?
(1) 900 to 3000 ha   (2) 600 to 900 km²
(3) 100 to 250 miles   (4) 1500 to 10,000 m²

170. When the particle Reynold number is more than 400, what will be the value of shield's Entrainment function ?
(1) 0.056   (2) 0.065   (3) 0.56   (4) 0.65

171. In case of loamy soils for graded bunding, what should be the gradient of channel ?
(1) 0.1 to 0.2%   (2) 0.5%   (3) 0.3 to 0.4%   (4) 0.5 to 0.7%

172. Which is the more effective retard of installation to control the stream bank erosion, where the stream bank currents are not swift ?
(1) Masonry jack   (2) Metal jack   (3) RCC jack   (4) Wooden jack

173. How is the runoff, classified on the basis of time lag between precipitation and runoff ?
(1) direct runoff and indirect runoff
(2) interflow and channel flow
(3) surface flow and base flow
(4) quick return flow and prompt flow

SPACE FOR ROUGH WORK

174. What is the interface between two distinct air masses of the weather system called ?

(1)   Front   (2)   Glaze   (3)   Snow   (4)   Cyclone

175. If through a basin area of 0.5 sq.km direct runoff of 15 ha - an is generated. What will be rainfall depth, if total rainfall losses are 30% ?

(1)   4.29 mm   (2)   4.29 cm   (3)   6.0 mm   (4)   6.0 cm

176. How much losses take place in water conveyance through unlined channels from source to field, of the total water lifted from the pond ?

(1)   15%   (2)   20 to 50%   (3)   50 to 60%   (4)   10 to 20%

177. Which principle is used in DU Boys formula for estimation of bed load ?

(1)   Theory of tractive force   (2)   Uniform size of sediments

(3)   Effect of grain diameter   (4)   Experimental data

178. Complete the following sentence meaningfully.

Trenches for hill slopes are designed on the basis of :

(1)   land slope   (2)   length of slope and erosive runoff velocity

(3)   slope length only   (4)   runoff volume to be stored

179. What is the value of form factor (Rf), if the drainage area is 50 square kilometres with the length of drainage basin 5000 m ?

(1)   0.01   (2)   0.02   (3)   0.20   (4)   2.0

180. Which type of drains are provided at the upper part of the cultivated area to intercept the uncontrolled flow of water from the upper catchment and divert it laterally safe into a natural or protected waterways ?

(1)   Diversion   (2)   Mole   (3)   Vertical   (4)   Metal

181. Among the following which condition is suitable for dug out type of ponds ?

(1)   Land slope less than 4 percent

(2)   Land slope greater than 4 percent

(3)   Land slope between 5 to 8 percent

(4)   None of the above

182. What is the property of rainfall that causes erosion ?

(1)   Emulsion   (2)   Erosion   (3)   Erosivity   (4)   Erodibility

SPACE FOR ROUGH WORK

183. What is the kinetic energy of rainfall for rainfall intensity 10 cm/h ?

(1) 203.10 units

(2) 210.30 units

(3) 201.30 units

(4) 299.30 units

184. What are the special constructional features of a detention reservoir for flood control in downstream area ?

(1) Provided with adjustable gates and valves.

(2) Provided with ungated outlet regulating outflow automatically.

(3) Provided with gates to regulate flood volume.

(4) Provided with storage to permanently detend flood volume.

185. Which sentence is correctly related to Universal Soil Loss Equation ?

(1) It computes the sediment deposition

(2) It is not an empirical equation

(3) It computes the gully erosion

(4) It computes the average annual soil loss

186. Which one of the following is selected on the basis of cost benefit ratio ?

(1) Design flood

(2) Peak flood

(3) Annual flood

(4) Ordinary flood

187. How many rows of wooden pole spurs are constructed along the eroded portion of stream bank to control stream bank erosion ?

(1) Two

(2) Three

(3) Four

(4) Five

188. What is the general relationship that exists between rainfall intensity (i), duration (t) and return period (T) ?

(1) $i \propto t/T$

(2) $i \propto t.T$

(3) $i \propto T/t$

(4) $i \propto 1/t.T$

189. The condition of the site for farm pond, where the largest storage volume can be obtained with least amount of earth work will be fulfilled where, _____.

(a) Valley is narrow

(b) Side slopes are relatively steep

(c) Valley is wide

(d) The area is plain

(1) (a) and (c)

(2) (b) and (d)

(3) (a) and (d)

(4) (a) and (b)

SPACE FOR ROUGH WORK

190. Erosion causing annual soil loss from 0.05 to 0.5 mm depth is categorized as which type of erosion ?

(1) Harmful (2) Weak (3) Medium (4) Serious

191. State the process in which part of rainfall first leaches into the soil and moves laterally without joining the water table, streams, rivers or oceans ?

(1) Surface runoff (2) Subsurface runoff

(3) Total runoff (4) Base flow

192. Complete the following statement.

The effectiveness of contour farming in erosion control is incorporated in factor of universal soil loss equation i.e.

(1) P (2) C (3) K (4) LS

193. What has the lowest runoff coefficient among various categories of following land use ?

(1) Agricultural lands (2) Forest lands

(3) Barren lands (4) Grass lands

194. What terminology is referred as the product of relief and drainage density ?

(1) Reynold number (2) Froud number

(3) Ruggedness number (4) Geometric number

195. What is the recurrence interval of rainfall magnitude whose probability of event is 50 percent ?

(1) 1 year (2) 2 years (3) 25 years (4) 50 years

196. Which type of bunds are constructed between two contour bunds, so as to limit a horizontal spacing to the maximum required ?

(1) Side (2) Marginal (3) Lateral (4) Supplemental

197. What is the suitable grade for graded bunding in areas of medium and heavy rainfall ?

(1) < 0.1% (2) 0.2 to 0.3% (3) 0.3 to 0.5% (4) 0.5 to 1.0%

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198. The unit hydrograph method to compute the direct runoff is limited to how much area of the watershed ?

    (1)   5000 km^2 (2)   4000 ha   (3)   2500 acre   (4)   10,000 m^2

199. State in which condition V - shape gullies are developed ?

    (1)   In alluvial plains   (2)   Easily erodible soil

    (3)   Subsoils are loose   (4)   Subsoils are tough to resist the runoff

200. For effective functioning of water harvesting structure, how much storage or water spread area should there be ?

    (1)   < 10 ha   (2)   25 to 35% of catchment area

    (3)   20% of catchment area   (4) $1/8^{th}$ to $1/5^{th}$ of catchment area

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सूचना — (पृष्ठ 1 वरून पुढे....)

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

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

नमुना प्रश्न

Q.No. 201.   The Catch varies inversely with the size of the :

    (1)   nozzle   (2)   droplet

    (3)   obstruction   (4)   sprayer

ह्या प्रश्नाचे योग्य उत्तर '' (3) obstruction'' हे आहे. त्यामुळे या प्रश्नाचे उत्तर '' (3) '' होईल, आता खालीलप्रमाणे प्रश्न क्र. 201 समोरील उत्तर–क्रमांक '' ③ '' च्या वर्तुळास खालीलप्रमाणे पूर्णपणे छायांकित करून दाखविणे आवश्यक आहे.

प्र. क्र. 201.   ①   ②   ⬤   ④

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

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