148/2017

Question Booklet Alpha Code	**A**	**Question Booklet Serial Number**	

Total Number of Questions : 100 **Time : 75 Minutes**

Maximum Marks : 100

INSTRUCTIONS TO CANDIDATES

1. The Question Paper will be given in the form of a Question Booklet. There will be four versions of Question Booklets with Question Booklet Alpha Code viz. **A, B, C** & **D**.
2. The Question Booklet Alpha Code will be printed on the top left margin of the facing sheet of the Question Booklet.
3. The Question Booklet Alpha Code allotted to you will be noted in your seating position in the Examination Hall.
4. If you get a Question Booklet where the alpha code does not match to the allotted alpha code in the seating position, please draw the attention of the Invigilator IMMEDIATELY.
5. The Question Booklet Serial Number is printed on the top right margin of the facing sheet. If your Question Booklet is un-numbered, please get it replaced by new Question Booklet with same alpha code.
6. The Question Booklet will be sealed at the middle of the right margin. Candidate should not open the Question Booklet, until the indication is given to start answering.
7. Immediately after the commencement of the examination, the candidate should check that the Question Booklet supplied to him/her contains all the 100 questions in serial order. The Question Booklet does not have unprinted or torn or missing pages and if so he/she should bring it to the notice of the Invigilator and get it replaced by a complete booklet with same alpha code. This is most important.
8. A blank sheet of paper is attached to the Question Booklet. This may be used for rough work.
9. **Please read carefully all the instructions on the reverse of the Answer Sheet before marking your answers.**
10. Each question is provided with four choices **(A), (B), (C)** and **(D)** having one correct answer. Choose the correct answer and darken the bubble corresponding to the question number using Blue or Black Ball Point Pen in the OMR Answer Sheet.
11. **Each correct answer carries 1 mark and for each wrong answer 1/3 mark will be deducted. No negative mark for unattended questions.**
12. No candidate will be allowed to leave the examination hall till the end of the session and without handing over his/her Answer Sheet to the Invigilator. Candidates should ensure that the Invigilator has verified all the entries in the Register Number Coding Sheet and that the Invigilator has affixed his/her signature in the space provided.
13. Strict compliance of instructions is essential. Any malpractice or attempt to commit any kind of malpractice in the Examination will result in the disqualification of the candidate.

1. Vice Chairman of NITI Aayog
   A) Rajiv Kumar
   B) Aravind Panagiriya
   C) Ramesh Chand
   D) Amitabh Kant

2. *Lalithopaharam Kilipattu* was a work of
   A) V.T. Bhattathirippadu
   B) A.K. Gopalan
   C) K.P. Karuppan
   D) P. Krishna Pillai

3. The earlier name of the Central Hall of the Parliament was
   A) Constitution Hall
   B) Panchayats
   C) Provincial Assembly Hall
   D) Darbar Hall

4. India's first underwater metro will be constructed in which city ?
   A) Chennai
   B) Kolkata
   C) Kochi
   D) Mumbai

5. T.H.O. Act passed in India
   A) 1994
   B) 2014
   C) 2009
   D) 2013

6. The 23rd Amendment of Indian Constitution
   A) 1969
   B) 1972
   C) 1970
   D) 1962

7. Founder of *Bhasha Poshini Sabha*
   A) Kumaranasan
   B) Kodungallur Kunjukkuttan Thampuran
   C) Keralavarma Valiyakoyi Thampuran
   D) Changampuzha

8. *Socrates* is a work of
   A) Ramakrishna Pillai
   B) Kumaranasan
   C) Chattampi Swamikal
   D) Sree Narayana Guru

9. *Jeeval Sahithya Prasthanam* was the early name of
   A) Library Movement
   B) Naadaka Prasthanam
   C) Purogamana Sahithya Prasthanam
   D) Namboothiri Movement

10. *Swadhar* a programme related to
    A) Women
    B) Children
    C) Police
    D) Cinema

11. When did the magazine *Muslim* Published ?

A) 1930 B) 1915 C) 1906 D) 1920

12. In which year India Government appointed MM Punchi Commission ?

A) 2007 B) 2009 C) 1990 D) 1977

13. *Pouranadam* weekly was started from

A) Kottayam B) Ernamkulam C) Kozhikode D) Thrissur

14. In which year Sahodaran Ayyappan became the Editor of the magazine *Yukthivadi* ?

A) 1928 B) 1910 C) 1921 D) 1917

15. *Hanuman* is a work of

A) Thycauad Ayya Vaikundar B) Ayyankali

C) Agamananda Swamikal D) Sahodaran Ayyappan

16. In which year *Poor Home Society* was established ?

A) 1975 B) 1919 C) 1949 D) 1937

17. The Editor of the magazine *Murali*

A) T. Ammalu Amma B) Kadathanattu Madhavi Amma

C) Kesavadev D) S.K. Pottakkadu

18. Malayalam translation of *Rubaiayat* by G. Sankara Kuruppu is

A) Vilasalathika B) Madanotsavam C) Jeevithotsavam D) Vilasalahari

19. Name the founder of Tatwa Prakasika Girls school.

A) Vagdevi Amma B) Appu Nedungadi

C) Akkamma Cheriyan D) A.V. Kuttimalu Amma

20. *Vigraharadhanagandanam* is work of

A) Dr. Ayyathan Gopalan B) Ayyankali

C) Sree Narayana Guru D) Brahmananda Sivayogi

21. The point of intersection between buoyant force and centre line of body is called
    A) Centre of gravity
    B) Meta-centre
    C) Centre of pressure
    D) Centroid

22. If shear stress is directly proportional to velocity gradient, then the fluid is known as
    A) Ideal fluid
    B) Real fluid
    C) Newtonian fluid
    D) Non-Newtonian fluid

23. For an inviscid, incompressible steady flow, the law of conservation of energy is expressed using
    A) Pascal equation
    B) Bernoulli equation
    C) Navier Stokes equation
    D) Darcy equation

24. Among the head losses, the most significant head loss in a laminar pipe flow is due to
    A) Friction
    B) Gradual contraction
    C) Sudden contraction
    D) Sudden enlargement

25. Pitot tube is a device used in the flowing fluid for measuring
    A) Discharge
    B) Pressure
    C) Velocity
    D) Kinetic energy

26. Unit hydrograph method for flood estimation is successful when applied to
    A) Small and medium sized basin
    B) Large basins
    C) Hilly areas
    D) All of the above

27. The objective of flood routing is to
    A) Relate inflow to storage
    B) Relate dam height to given size outlet structures
    C) Relate back water effect
    D) Relate inflow to outflow

28. Infiltration can be measured using
    A) Lysimeters
    B) Anemometers
    C) Cylindrical metal rings
    D) USWB Class A pans

29. Among the major river basins in India, the largest catchment area is for
    A) Ganga
    B) Brahmaputra
    C) Godavari
    D) Indus

30. Sheet erosion is caused by
    A) Wind
    B) Glaciers
    C) Fast flowing rivers
    D) Heavy rain

31. The maximum size of clay particle is
    A) 0.0002 mm
    B) 0.002 mm
    C) 0.02 mm
    D) 0.075 mm

32. IS soil classification is based on
    A) Grain size
    B) Grain size distribution
    C) Plasticity properties
    D) Both B and C

33. The relation between $\sigma_1, \sigma_2, \sigma_3$ in triaxial compression test on a soil
    A) $\sigma_1 = \sigma_2 + \sigma_3$
    B) $\sigma_2 = \sigma_1 \ \sigma_3$
    C) $\sigma_2 = \sigma_3$
    D) $\sigma_3 = \sigma_2 + \sigma_3$

34. Compaction of a soil is measured in terms of its
    A) permeability
    B) compressibility
    C) specific gravity
    D) dry density

35. In a Darcian flow, flow velocity is
    A) discharge velocity
    B) actual velocity
    C) seepage velocity
    D) boundary velocity

36. The main reason behind primary compression is expulsion of
    A) Water
    B) Air
    C) Both air and water
    D) Soil

37. The unit of co-efficient of consolidation is
    A) cm^4/sec
    B) cm^3/sec
    C) cm^2/sec
    D) cm/sec

38. What is the plasticity index given on A-line by a soil with liquid limit 30 ?
    A) 9.5 B) 9
    C) 7.5 D) 7.3

39. A soil having uniformity coefficient less than 4 is called
    A) Uniform B) Fine
    C) Coarse D) Well graded soil

40. If the moisture content of a fully saturated soil is 100 %, then the void ratio is equal to
    A) True specific gravity B) Mass specific gravity
    C) Half of true specific gravity D) One-third of true specific gravity

41. Liquid limit and plastic limit exist in
    A) Gravel B) Silty soil
    C) Sandy soil D) Clay

42. If water table rises to ground level of a footing in cohesionless soil, the bearing capacity
    A) Remains the same B) Reduces to half
    C) Reduces to one third D) Increases

43. The ultimate bearing capacity of a surface strip footing on clay, according to Terzaghi's theory is
    A) 5.7 c B) 5.14 c
    C) $q_u B$ D) 9 c
    Where c = unit cohesion, q_u = unconfined compressive strength and B = width of footing

44. Negative skin friction on a pile under vertical compressive load acts
    A) Downwards and increases the load carrying capacity of the pile
    B) Downwards and reduces the load carrying capacity of the pile
    C) Upwards and increases the load carrying capacity of the pile
    D) Downwards and maintains the same load carrying capacity of the pile

45. The friction circle for a pure cohesive soil is
    A) A point B) A greater circle
    C) A smaller circle D) None of these

46. The most common method used to advance a bore hole is

A) Rotary drilling
B) Augur boring
C) Percussion drilling
D) Wash boring

47. Terzaghi's bearing capacity factors depends upon

A) Angle of internal friction
B) Cohesion
C) Cohesion and angle of internal friction
D) Density of soil

48. The safe bearing capacity of footing in a pure clay is equal to

A) Undrained cohesion
B) Half of vane shear strength
C) Unconfined compressive strength
D) None of the above

49. The specific yield of soil depends upon

A) Shape and size of particle
B) Distribution of pores
C) Compaction of stratum
D) All of these

50. The seating load provided in a plate load test is

A) 2 kN/m^2
B) 0.5 kN/m^2
C) 7 kN/m^2
D) 10 kN/m^2

51. A triangle is said to be well conditioned when its angles lies between

A) 15° – 155°
B) 20° – 150°
C) 30° – 120°
D) 60° – 110°

52. An optical square works on the principle that

A) Reflection
B) Double reflection
C) Refraction
D) Double refraction

53. The magnetic bearing of a line is 62° 20′ and the magnetic declination at that place is 2° 50′ east, then the true bearing of that line will be

A) 64° 70′
B) 60° 30′
C) 59° 30′
D) 65° 10′

54. The length of a line measured with a 20 m chain was found to be 634.4 m. If the chain was 5 cm too long throughout the measurement, then the true length of the line is
    A) 632.420 m
    B) 635.986 m
    C) 634.420 m
    D) 634.425 m

55. In a plane table survey the plotting of inaccessible points can be done by
    A) Method of intersection
    B) Method of interpolation
    C) Method of radiation
    D) Method of traversing

56. The most reliable method of plotting a theodolite traverse, is
    A) By consecutive co-ordinates of each station
    B) By independent co-ordinates of each station
    C) By plotting included angles and scaling off each traverse leg
    D) By the tangent method of plotting

57. In quadrantal bearing system a line is said to be free from local attraction, if the FB and BB are having the following relation
    A) Numerically equal
    B) Numerically unequal
    C) Numerically equal with opposite quadrants
    D) FB = BB + 90°

58. The operation of levelling to determine the elevation between two points is known as
    A) Differential levelling
    B) Hypsometry
    C) Barometric levelling
    D) Check levelling

59. The systematic errors which persist and have regular effects in the performance of a survey operation, are due to
    A) Carelessness
    B) Inattention
    C) Faulty instrument
    D) Lack of knowledge

60. Remote sensing techniques are being usefully employed for the purpose of
    A) improving natural resource management
    B) land use
    C) protection of the environment
    D) all the above

61. A man can develop
    A) 0.1 hp
    B) 0.5 hp
    C) 0.75 hp
    D) 1.0 hp

62. Medium size bullock can develop
    A) 0.50 to 0.75 hp
    B) 0.75 to 1.0 hp
    C) 0.75 hp to 1.1 hp
    D) 1.0 to 1.5 hp

63. It is termed as _____, because in this type of irrigation, water does not wet the soil surface.
    A) Surface irrigation
    B) Flood irrigation
    C) Subsurface irrigation
    D) None of these

64. The velocity required to operate wind mill should be more than
    A) 5 km ph
    B) 10 km ph
    C) 5 miles per hour
    D) 10 miles per hour

65. The single cylinder engine is generally used in
    A) Tractor
    B) Stationary engine
    C) Motor cars
    D) Lorry engine and buses

66. The steam engine is
    A) Single stroke engine
    B) Two stroke engine
    C) Four stroke engine
    D) None of these

67. The carburettor is main part of
    A) Diesel engine
    B) Steam engine
    C) Petrol engine
    D) Gas engine

68. In two-stroke cycle engine, one power stroke is obtained after every
    A) Half revolution of crankshaft
    B) One revolution of crankshaft
    C) Two revolution of crankshaft
    D) Three revolution of crankshaft

69. The main purpose of piston rings is
    A) To control combustion pressure
    B) To control cylinder wall lubrication
    C) To drain out excessive oil
    D) All the above purposes

70. The piston speed of an engine is equal to
    A) 2 LN
    B) ALN
    C) 4 LN
    D) None of these

71. Oil pump is driven by
    A) Connecting rod
    B) Timing gears
    C) Crankshaft
    D) Piston pin

72. Flywheel is made of
    A) Cast iron
    B) Aluminium alloy
    C) High carbon steel
    D) A combination of these three

73. The purpose of governor in the engine
    A) To increase the engine speed
    B) To regulate the engine speed
    C) To decrease the engine speed
    D) None of these

74. The weight of diesel engine per horsepower is
    A) Lighter than petrol engine
    B) Equal to petrol engine
    C) Heavier than petrol engine
    D) None of these

75. Distance travelled by piston from TDC to BDC is
    A) Stroke
    B) Bore
    C) Piston displacement
    D) Piston speed

76. Ratio of brake horsepower to indicated horsepower is
    A) Thermal efficiency
    B) Volumetric efficiency
    C) Mechanical efficiency
    D) Brake efficiency

77. The operation that perform to open up any cultivable land is
    A) Minimum tillage
    B) Reduced tillage
    C) Primary tillage
    D) Secondary tillage

78. Finer operation performed for seed bed preparation is

A) Strip tillage
B) Primary tillage
C) Secondary tillage
D) Rotary tillage

79. 'V' belt drives are employed where

A) it is to transmit heavy load at low speed
B) it is not necessary to maintain exact speed ratio
C) it is necessary to maintain exact speed ratios
D) none of the above

80. Out of the following, which one are the primary tillage implements.

A) Disc plow and disc harrow
B) Chisel plow and disc harrow
C) Disc plow and mould board plow
D) Leveller and clod crusher

81. An implement that pulled and guided by single hitch point of tractor is

A) Mounted implement
B) Trailed implement
C) Semi mounted implement
D) None of the above

82. Coupling used when two shafts are appreciable out of line is

A) Flexible coupling
B) Universal coupling
C) Flanged coupling
D) Oldham coupling

83. The phenomenon of evaporation from water surface, from the soil and from plant is generally known as

A) Dehydration
B) Boiling
C) Transpiration
D) Hydration

84. Sprinkler irrigation is not suitable for

A) rice
B) coffee plant
C) plantation crops
D) none of them

85. Drainage coefficient is expressed as depth in _____ water drained off from a given area in 24 hrs.

A) metres
B) inch
C) foot
D) centimetres

86. Lubrication causes the effect of

A) Cooling effect
B) Cleaning effect
C) Reduced friction effect
D) All the above

87. Biogas is a mixture of

A) Methane and carbon dioxide
B) Ethane and carbon dioxide
C) Ethane and methane
D) Ethane and carbon monooxide

88. In air cooled engines fins are the components of

A) Cooling system
B) Ignition system
C) Fuel system
D) None of the above

89. A lysimeter is used to measure

A) Infiltration
B) Evaporation
C) Evapotranspiration
D) Radiation

90. In surface method of irrigation water is applied directly from a

A) Pipe
B) Channel
C) Drip head
D) Sprinkler

91. Dibbler is used for

A) Ploughing
B) Seed sowing
C) Levelling of land
D) Interculture

92. Function of a seed-drill is

A) Making furrow
B) Dropping seeds
C) Covering the seeds in furrow
D) All of the above

93. The major defects of rubber belts are
    A) Costly
    B) Slips on wet
    C) Early rubbed
    D) Increased worn out due to heat

94. The most common example of rotodynamic pump is the
    A) Reciprocating pump
    B) Centrifugal pump
    C) Airlift pump
    D) None of the above

95. Tractor drawn implements have
    A) Higher speed and higher working capacity
    B) Lower speed and lower working capacity
    C) Higher speed and lower working capacity
    D) Lower speed and higher working capacity

96. The random scattering of seed on the surface of seedbed is
    A) Dibbling
    B) Broadcasting
    C) Hill dropping
    D) Check row planting

97. Planter is different from seed drill in respect to
    A) Power transmission
    B) Metering mechanism
    C) Furrow opener
    D) None of these

98. Helical blades of mower are arranged in
    A) Horizontal cylindrical form
    B) Vertical cylindrical form
    C) Axial cylindrical form
    D) None of these

99. A mower with high speed knife rotating in horizontal plane is known as
    A) Reciprocating mower
    B) Gang mower
    C) Horizontal rotary mower
    D) Flail mower

100. In biogas plant digestion (biological process) occurs in absence of
    A) Oxygen
    B) Carbon dioxide
    C) Hydrogen
    D) Methane

Space for Rough Work

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