PUNJAB PUBLIC SERVICE COMMISSION

Competitive Examination (January-2018) for Recruitment of Workshop Superintendent in the Department of Technical Education & Industrial Training, Government of Punjab

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

Candidate's Name _____

Father's Name _____

Date of Birth ☐☐ ☐☐ ☐☐☐☐ **Category Code*** ☐☐

DD **MM** **YYYY** **(*as given in the admit card)**

OMR Response Sheet No. _____

Roll No. _____

Booklet No.

Candidate's Signature (Please sign in the box)

INSTRUCTIONS

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

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.

3. The candidate shall be liable for any adverse effect if the information given above is wrong or illegible.

4. The candidate must fill all the columns given above on this page and sign at the appropriate place.

5. **Each candidate is required to attempt 100 questions in 120 minutes**, except for orthopaedically/visually impaired candidates, who would be given 40 minutes extra, by marking correct responses on the OMR sheet which would be supplied separately to the candidates

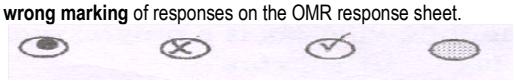
6. **The candidate must write the following on the OMRs sheet:**
   (a)Serial number of OMR sheet supplied to him/her for marking the responses to the questions.
   (b)Serial number of the question booklet
   Failure to do so may lead to cancellation of candidature or any other action which the Commission may deem fit.

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.

   a b c d

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.

9. The candidates shall be responsible to 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 examples of wrong marking** of responses on the OMR response sheet.

10. The candidates, when allowed to open the question paper booklet, are advised to 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 this one.

11. The serial number of the new booklet should be entered in the relevant column of the OMR. The candidate should request the Invigilation Staff to authenticate the change in serial number of question booklet by obtaining the initials of the Staff on the corrected serial number of the question booklet

12. The question paper booklet has 14 pages.

13. **Each question shall carry three marks.**

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.**

15. **There is no negative marking** for wrong answers or questions not attempted by the candidate.

1. What is INSAS?
    (a) An assault rifle
    (b) A military tank
    (c) Supersonic missile
    (d) Rocket Launcher by ISRO

2. Who among the following is Governor of RBI?
    (a) Urjit Patel
    (b) Bimal Jalan
    (c) Raghuram Rajan
    (d) Bibek Debroy

3. Where is the headquarter of ISRO (Indian Space Research Organisation) located?
    (a) New Delhi
    (b) Sri Harikota
    (c) Banglore
    (d) Chennai

4. Where is the city of Haifa located?
    (a) Iran
    (b) Israel
    (c) Saudi Arabia
    (d) North Korea

5. Which among the following countries is not a member of ASEAN?
    (a) Indonesia
    (b) India
    (c) Myanmar
    (d) Singapore

6. Who among the following is Prime Minister of Israel?
    (a) Ariel Sharon
    (b) Joko Widodo
    (c) Thongloun Sisoulith
    (d) Benjamin Netanyahu

7. Which one of the following is not a traditional Punjabi dance?
    (a) Sammi
    (b) Vain
    (c) Gidha
    (d) Bhangra

8. The most abundant gas in the atmosphere is:
    (a) Carbon dioxide
    (b) Helium
    (c) Nitrogen
    (d) Oxygen

9. 'Dengue' is caused by:
    (a) Anopheles mosquito
    (b) Aedes Aegupti mosquito
    (c) A bacteria
    (d) Climate change

10. Ranjit Sagar Dam (Hydro Electric Project) is in which of the following districts?
    (a) Hoshiarpur
    (b) Gurdaspur
    (c) Pathankot
    (d) None of the above

11. Harike Wetland falls in which one of the following districts?
    (a) Amritsar
    (b) Tarn Taran
    (c) Rupnagar
    (d) Hoshiarpur

12. Who amongst the following became the first woman to win Sahitya Akademi Award?
    (a) Dilip Kaur Tiwana
    (b) Amrita Pritam
    (c) Ajit Kaur
    (d) Sheila Bhatia

13. Which one of the following dances is not performed by women?
    (a) Sammi
    (b) Gidha
    (c) Kikli
    (d) Luddi

14. Which one of the following musical instruments consists of a pair of wooden flutes?
    (a) Sarangi
    (b) Bugchu
    (c) Algoza
    (d) Rabaab

Directions (Questions 15-17): In each of the following questions, a number series is given with one term missing. Choose the correct alternative that will continue the same pattern and replace the questions mark in the given series.

15. 2,3,3,5,10,13, ? 43, 172, 177
    (a) 23
    (b) 38
    (c) 39
    (d) 40

16. 3, 7, 23, 95, ?
    (a) 62
    (b) 128
    (c) 479
    (d) 575

17. 2, 2, 5, 13, 28, ?
    (a) 49
    (b) 50
    (c) 51
    (d) 52

Directions (Questions 18-19) : In each of the following questions there is a certain relationship between two given words on one side of :: and one word is given on another side of :: while another word is to be found from the given alternatives, having the same relation with this word as the words of the given pair bear. Choose the corrective alternative.

18. Botany: Plants :: Entomology: ?
    (a) Snakes
    (b) Insects
    (c) Birds
    (d) Germs

19. Pulp: Paper :: Hemp: ?
    (a) Basket
    (b) Yarn
    (c) Rope
    (d) Cotton

Directions (Questions 20-21): In each of the following questions, there is some relationship between the two terms to the left of :: and the same relationship holds between the two terms to its right. Also, in each question, one term either to the right of :: or to the left of it is missing. This term is given as one of the alternatives given below each question. Find out this term.

20. CIRCLE is related to RICELC in the same way as SQUARE is related to ……..
    (a) QSUERA
    (b) QUSERA
    (c) UQSAER
    (d) UQSERA

21. Which of the following pairs is the same as AZ, EV, GT and DW?
    (a) UD
    (b) WZ
    (c) HS
    (d) BW

22. Choose the word which is least like the other words in the group.
    (a) Ginger (b) Onion (c) Beetroot (d) Coriander

23. If CONTRIBUTE is written as ETBUIRNTOC, then which letter will be in the sixth place when counted from the left if POPULARISE is written in the same way?
    (a) R
    (b) I
    (c) A
    (d) L

Directions (Questions 24 to 26) : Read the information given below to answer these questions:

(i) Aarti is older than Sanya
(ii) Muskan is elder than Aarti but younger than Kashish
(iii) Kashish is elder than Sanya
(iv) Sanya is younger than Muskan
(v) Gargi is the eldest

24. Who is the youngest?
    (a) Kashish
    (b) Aarti
    (c) Muskan
    (d) Sanya

25. Agewise, who is in the middle?
    (a) Kashish
    (b) Aarti
    (c) Muskan
    (d) Sanya

26. Which of the given statements is/are superfluous and can be dispensed with while answering the above questions?
    (a) Either (i) or (iii)
    (b) Only (iv)
    (c) Either (i) or (iv)
    (d) Both (iii) and (iv)

Directions (Questions 27 to 32): Study the following information and answer the questions given below it:

A blacksmith has five iron articles A, B, C, D and E, each having a different weight.

(i) A weighs twice as much as B
(ii) B weighs four and a half times as much as C
(iii) C weighs half as much as D
(iv) D weighs half as much as E
(v) E weighs less than A but more than C

27. Which of the following is the lightest in weight?
    (a) A
    (b) B
    (c) C
    (d) D

28. E is lighter in weight than which of the other two articles?
    (a) A, B
    (b) D, C
    (c) A, C
    (d) D, B

29. E is heavier than which of the following two articles?
    (a) D, B
    (b) D, C
    (c) A, C
    (d) A, B

30. Which of the following articles is the heaviest in weight?
    (a) A
    (b) B
    (c) C
    (d) D

31. Which of the following represents the descending order of weights of the articles?
    (a) A, B, E, D, C
    (b) B, D, E, A, C
    (c) E, C, D, A, B
    (d) C, A, D, B, E

32. Which of the above given statements is not necessary to determine the correct order of articles according to their weights?
    (a) (i)
    (b) (ii)y
    (c) (iii)
    (d) (v)

33. Which of the following words will come second in the English dictionary?
    (a) Magical
    (b) Magnify
    (c) Marshal
    (d) Magnetic

34. There are some benches in a classroom. If 4 students sit on each bench, then 3 benches are left unoccupied. However, if 3 students sit on each bench, 3 students are left standing.
    How many students are there in the class?
    (a) 36
    (b) 48
    (c) 56
    (d) 64

35. There are …… states in India.
    (a) 26
    (b) 27
    (c) 28
    (d) 29

36. Lok Sabha represents the ……
    (a) States of Indian Federation
    (b) People of India as a whole
    (c) Minorities of the Country
    (d) Marginal of the County

37. The Attorney-General of India is appointed by the ……

(a) Chief Justice of the Supreme Court
(b) Chairperson of the Lok Sabha
(c) President
(d) Prime Minister

38. E-governance stands for ……

(a) Electrical-Governance
(b) Electronic-Governance
(c) Elective-Governance
(d) Exceptional-Governance

39. There are three organs in a government. Choose the wrong answer:

(a) Legislature
(b) Executive
(c) President
(d) Judiciary

40. Which is an extra-Constitutional body?

(a) Language Commission
(b) Election Commission
(c) NITI Aayog
(d) Finance Commission

41. In countries where polished rice is the main cereal in diet, people suffer from:

(a) Pellagra
(b) Scurvy
(c) Beri-beri
(d) Osteomalacia

42. The disease that is caused by viral infection is:

(a) Typhoid
(b) Cholera
(c) Common cold
(d) Tetanus

43. The age of a tree can be found by:

(a) Measuring its height
(b) Measuring its diameter
(c) Analysis of its sap
(d) Counting the annual growth rings in a section of its stem

44. Silicosis is a:
    (a) Kidney disease
    (b) Liver disease
    (c) Lung disease
    (d) Neurological disorder

45. Keoladeo National Park is located in:
    (a) Dehradun
    (b) Bharatpur
    (c) Mysore
    (d) Chhattisgarh

46. The substance present in abundant amounts in sea water is:
    (a) Potassium chloride
    (b) Common salt
    (c) Sand
    (d) Calcium carbonate

47. 'Gobar gas' contains mainly:
    (a) Carbond dioxide
    (b) Methane
    (c) Acetylene
    (d) Ethylene

48. The acid present in lemons and oranges is:
    (a) Acetic acid
    (b) Hydrochloric acid
    (c) Citric acid
    (d) Oxalic acid

49. Cooking gas is a mixture of:
    (a) Carbon monoxide and carbon dioxide
    (b) Butane and propane
    (c) Methane and ethylene
    (d) Carbon dioxide and oxygen

50. Diamond is chemically:
    (a) A mixture of metal carbonates
    (b) Pure carbon
    (c) A pure form of sand
    (d) A mixture of calcium and magnesium phosphate

51. 'Fixation of nitrogen' implies:
    (a) The liquefaction of nitrogen
    (b) The conversion of atmospheric nitrogen into useful compounds
    (c) The conversion of nitrogen into amines
    (d) The solidification of nitrogen gas of the atmosphere

52. The increase of temperature
    (a) Increases the viscosity of a liquid but decreases viscosity of a gas
    (b) Decreases the viscosity of a liquid & decrease viscosity of a gas
    (c) Decreases the viscosity of a liquid but increases viscosity of a gas
    (d) Increases the viscosity of a liquid & increases viscosity of a gas

53. Surface Tension has the units
    (a) Force per unit area
    (b) Force per unit length
    (c) Force per unit volume
    (d) None of the above

54. Pascal's law states that pressure at a point is equal in all directions
    (a) in a liquid at rest (b) in a fluid at rest
    (c) in a laminar flow (d) in a turbulent flow

55. When a falling body has attained terminal velocity, weight of the body is equal to
    (a) drag force minus buoyant force (b) buoyant force minus drag force
    (c) drag force plus buoyant force (d) drag force

56. Mechanical efficiency of a turbine is the ratio of
    (a) power at the shaft to the power at the inlet of turbine
    (b) power at the shaft to the power given to the runner
    (c) power at the inlet of the turbine to the power at the shaft
    (d) none of the above

57. The pitch of a sound wave is directly related to
    (a) wavelength (b) frequency
    (c) velocity (d) amplitude

58. The angle of projection for maximum range of a projectile is
    (a) 75^0 (b) 60^0
    (c) 30^0 (d) 45^0

59. If angle of friction is zero
(a) force of friction will act normal to the plane
(b) force of friction will act opposite to the direction of motion
(c) force of friction will be zero
(d) force of friction will be infinite

60. Which one is not the property of a thermodynamic system
(a) pressure (b) enthalpy
(c) entropy (d) heat

61. The process of removing the burnt gases in IC engines from the combustion chamber of the engine cylinder is known as
(a) supercharging (b) scavenging
(c) polymerisation (d) detonation

62. Choose the wrong statement
(a) The governor keeps the engine speed constant at all conditions
(b) The flywheel prevents fluctuation of speed
(c) Eccentric provides reciprocating motion to the slide valve
(d) A single acting steam engine produces twice the power produced by a double acting steam engine

63. A three stage reciprocating air compressor, compresses air from 1 bar to 27 bar. For a perfect intercooling, the pressure ration in each stage will be
(a) 2 (b) 4
(c) 3 (d) 5

64. Heat is rejected by a refrigerant during a refrigeration cycle in a
(a) condenser (b) evaporator
(c) compressor (d) throttle valve

65. When maximum horse power is transmitted, the effective tension in the tight side of the belt is equal to
(a) twice the centrifugal tension (b) 3 times the centrifugal tension
(c) half the centrifugal tension (d) one-third the centrifugal tension

66. If the diameter of a solid shaft is increased two times, the torque transmitted will be
(a) two times (b) four times
(c) eight times (d) sixteen times

67. The capacity of a material to absorb energy in the elastic range is known as
(a) creep (b) fatigue
(c) impact (d) resilience

68. When an elevator moves upwards with uniform acceleration the apparent weight of a body kept in the elevator is
(a) decreased (b) remains same
(c) increased (d) none of the above

69. Colours produced by thin films of oil on the surface of water is due to
(a) reflection of light (b) diffraction of light
(c) interference phenomenon (d) total internal reflection

70. Orthogonal cutting system is also known as
(a) one-dimensional cutting system (b) two-dimensional cutting system
(c) three-dimensional cutting system (d) four-dimensional cutting system

71. The only angle on which the strength of the tool depends is
(a) clearance angle (b) rake angle
(c) cutting angle (d) lip angle

72. For drilling brass or bronze, a drill with
(a) zero helix angle is used (b) negative helix angle is used
(c) low helix angle is used (d) high helix angle is used

73. A process of removing metal, by pushing or pulling a cutting rod is known as
(a) forming (b) hemming
(c) broaching (d) bulging

74. The operation in which the edges of the sheet are turned over to provide stiffness and a smooth edge, is known as
(a) tumbling (b) trimming
(c) hemming (d) bulging

75. Which of the following machines utilises fly cutter?
(a) planer (b) shaper
(c) broaching (d) milling machine

76. A diamond pointed chisel is used for cutting
(a) grooves (b) keyways
(c) V-shaped grooves (d) flat surfaces

77. The process which is employed for the production of seamless tubes, is known as
(a) extrusion (b) forging
(c) casting (d) piercing

78. For welding titanium by MIG process, the gas used is
(a) pure argon gas (b) CO_2
(c) argon-oxygen mixture (d) nitrogen

79. In brazing, the melting point of the filter metal should be
(a) above 1000^0 C (b) above 800^0 C
(c) above 420^0 C (d) above 300^0 C

80. Which of the following abrasive should be used for grinding material of low tensile strength?
(a) diamond (b) silicon carbide
(c) aluminium oxide (d) sand stone

81. Permeability is high for
(a) fine grains (b) medium grains
(c) coarse grains (d) rounded grains

82. The process of coating a thin layer of phosphate on steel is known as
(a) anodising (b) parkerising
(c) galvanising (d) brazing

83. For making thin gears from sheet metals upto thickness 3 m, the method used is
(a) casting (b) stamping
(c) extruding (d) coining

84. To protect against neutron & gamma rays
(a) reflector is used (b) moderator is used
(c) shielding is done (d) control rod is used

85. The basic law of heat conduction is called
(a) Newton's law of cooling (b) Fourier's law
(c) Kirchhoff's law (d) Stefan's law

86. If the exit pressure is less than the critical pressure, the nozzle used should be
(a) divergent (b) convergent
(c) divergent-convergent (d) any of the above

87. The mathematical technique, for finding the best use of limited resources in an optimum manner is known as
(a) queuing theory (b) network analysis
(c) value analysis (d) linear programming

88. Radiation which has the least energy
(a) α-rays (b) β-rays
(c) γ-rays (d) electrical waves

89. The ratio of the radii of an atom and its nucleus is nearly
(a) 10^{-5} (b) 10^{5}
(c) 10^{-8} (d) 10^{8}

90. Dalton's law of partial pressure is applicable to mixture of
(a) HCl and NH_3 (b) H_2 and Cl_2
(c) SO_2 and O_2 (d) CO and CO_2

91. The unit of flux density is
(a) AT (b) weber
(c) tesla (d) none of the above

92. A heat engine is supplied with 300 kcal / sec of heat at constant fixed temperature of 250^0 C. If 200 kcal / sec are rejected at 10^0 C, the cycle is
(a) reversible (b) irreversible
(c) impossible (d) none of the above

93. The draught produced by a fan which is placed at the bottom of the chimney and sucks the gas from boiler side, is known as
(a) induced draught (b) forced draught
(c) natural draught (d) none of the above

94. Centre of pressure of a vertical plane surface immersed in a liquid is
(a) above the CG of the plane surface
(b) at the CG of the plane surface
(c) below the CG of the plane surface
(d) none of the above

95. A current metre is a device used for measuring
(a) velocity (b) viscosity
(c) current (d) pressure

96. The statement that when any two bodies are in thermal equilibrium with third, they are also in thermal equilibrium with each other is

(a) first law of thermodynamics (b) zeroth law of thermodynamics
(c) second law of thermodynamics (d) none of the above

97. Pipes subjected to a very high pressure of the order 120 kg / cm^2 are made of

(a) pressed casting (b) semi-centrifugal casting
(c) slush casting (d) extrusion process

98. The oxides, nitrides, carbides & silicate of metals are known as

(a) organic materials (b) ceramic materials
(c) ferrous material (d) non-ferrous material

99. The unit of impedance is

(a) mho (b) ohm
(c) hertz (d) none of the above

100. Volume control on the front panel of a TV set is

(a) Variable cell (b) pre-set resistor
(c) variable resistor (d) none of the above

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