

# MIZORAM SUBORDINATE SERVICES SELECTION BOARD



## COMBINED COMPETITIVE EXAMINATION FOR RECRUITMENT TO THE POST OF JE(CIVIL)/OVERSEER JANUARY - 2023

Question Booklet Series

**D**

PAPER IV

**Time Allowed : 3 Hours**

**Maximum Marks : 200**

### INSTRUCTIONS

1. This paper consists of one hundred (100) multiple-choice type of questions.
2. Immediately after the commencement of the examination, you should check that this question booklet does not have any unprinted or missing pages or items, etc. If so, get it replaced by a complete booklet from the invigilator.
3. Please note that it is the candidate's responsibility to fill in all necessary details such as Roll Number, etc. and the Question Booklet Series A, B, C or D carefully and without any omission or discrepancy at the appropriate places in the OMR Answer Sheet. Any omission/discrepancy will render the Answer Sheet liable for rejection.
4. Each question comprises four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the best. In any case, choose *ONLY ONE* response for each item.
5. You have to mark your responses *ONLY* on the separate OMR Answer Sheet provided. ***Read instructions given in the OMR sheet carefully.***
6. All questions carry equal marks.
7. Rough work is to be done in the spaces available in the question booklet. ***Use of calculator is not permitted.***
8. You have to submit your Answer Sheet to the invigilators at the end of the examination compulsorily and must not carry it with you outside the Examination Hall. You are permitted to take away with you the question booklet on conclusion of examination.
9. There are no negative marks for incorrect answer.



1. According to ISI method of measurement, the order of the sequence is  
(A) length, breadth, height (B) breadth, length, height  
(C) height, breadth, length (D) height, length, breadth
2. The most reliable estimate is  
(A) Preliminary Estimate (B) Detailed Estimate  
(C) Plinth Area Estimate (D) Cube Area Estimate
3. The material created by mixing cement, sand and water forming a homogeneous substance is called  
(A) mortar (B) concrete  
(C) brick (D) tile
4. A mark of depth 10-20 mm placed in the face of a brick to form a key for holding the mortar is called  
(A) Lap (B) Header  
(C) Bat (D) Frog
5. A temporary structure erected to provide a working platform with limited storage of plant and building material is called  
(A) Scaffolding (B) Shoring  
(C) Underpinning (D) Frames
6. In analysis of rates, contractor's profit is taken as  
(A) 5 % (B) 10 %  
(C) 15 % (D) 20 %
7. A certificate that the detailed estimate has been prepared and approved on the basis of a properly detailed design is called  
(A) Administrative approval (B) Expenditure sanction  
(C) Technical sanction (D) Working sanction
8. Contingencies are provided in the estimate  
(A) for items in the estimate  
(B) to increase the estimate amount  
(C) for meeting unforeseen incidental expenses  
(D) all of the above
9. Tender in which the contractor are required to quote rates for individual items of work as given in the schedule of quantities.  
(A) Lump sum tender (B) EPC mode tender  
(C) Item rate tender (D) Percentage rate tender
10. Restricted tenders are tenders of  
(A) special nature (B) require specialized equipment  
(C) important buildings (D) all of these
11. If the whole circle bearing of a line is  $270^\circ$ , its reduced bearing is  
(A) N  $90^\circ$  W (B) S  $90^\circ$  W  
(C) W  $90^\circ$  (D) E  $90^\circ$

12. Surveys which are carried out to depict mountains, rivers, water bodies, wooded areas and other cultural details, are known as
  - (A) Cadastral surveys
  - (B) City surveys
  - (C) Topographical surveys
  - (D) Guide map surveys
13. A relatively fixed point of known elevation above datum is called
  - (A) Reference point
  - (B) Datum point
  - (C) Reduced level
  - (D) Bench mark
14. A series of closely spaced contour lines represents a
  - (A) steep slope
  - (B) gentle slope
  - (C) uniform slope
  - (D) plane surface
15. The curvature of the earth is ignored in
  - (A) Geodetic survey
  - (B) Plane survey
  - (C) Hydrographic survey
  - (D) Chain survey
16. Penetration test on bitumen is used for determining its
  - (A) grade
  - (B) viscosity
  - (C) ductility
  - (D) temperature susceptibility
17. The width of road pavements depends upon
  - (A) width of traffic lane
  - (B) number of traffic
  - (C) width of median strip
  - (D) all of these
18. If aggregate impact value is 20 to 30 percent, then it is classified as
  - (A) exceptionally strong
  - (B) strong
  - (C) satisfactory for road surfacing
  - (D) unsuitable for road surfacing
19. Flexible pavement distribute the wheel load
  - (A) directly to sub-grade
  - (B) through structural action
  - (C) through a set of layers to the sub-grade
  - (D) none of the above
20. The fundamental factor in the selection of pavement type is
  - (A) climatic condition
  - (B) type and intensity of traffic
  - (C) sub-grade soil and drainage conditions
  - (D) availability of funds for the construction
21. The stress in the wall of a thin cylinder subjected to internal pressure, is
  - (A) hoop compression
  - (B) shear
  - (C) torsional shear
  - (D) hoop tension
22. A column splice is used to increase the
  - (A) length of the column
  - (B) strength of the column
  - (C) cross-sectional area of the column
  - (D) all of these

23. Stiffeners are used in a plate girder  
(A) to reduce the compressive stress (B) to reduce the shear stress  
(C) to take the bearing stress (D) to avoid buckling of web plate
24. Factor of safety is the ratio of  
(A) yield stress to working stress  
(B) tensile stress to working stress  
(C) compressive stress to working stress  
(D) bearing stress to working stress
25. Steel tanks are mainly designed for  
(A) weight of tank (B) wind pressure  
(C) water pressure (D) earthquake forces
26. The walls which are necessary on the hill side of roadway where earth has to be retained from slipping is known as  
(A) Retaining wall (B) Breast wall  
(C) Parapet wall (D) Revetment wall
27. The shape of regulatory signs used in traffic signal is  
(A) circular (B) triangular  
(C) rectangular (D) octagonal
28. The desirable camber for straight roads with water bound macadam or gravel surface is  
(A) 1 in 33 to 1 in 25 (B) 1 in 40 to 1 in 33  
(C) 1 in 150 to 1 in 140 (D) 1 in 160 to 1 in 140
29. The distance travelled by a moving vehicle during total reaction time is known as  
(A) sight distance (B) stopping distance  
(C) lag distance (D) braking distance
30. The convexity provided to the carriage way between the crown and edge of pavement is known as  
(A) Gradient (B) Slope  
(C) Camber (D) Vertical curve
31. Sinking fund is  
(A) the fund for rebuilding a structure when its economic life is over  
(B) raised to meet maintenance costs  
(C) the total sum to be paid to the municipal authorities by the tenants  
(D) a part of the money kept in reserve for providing additional structures and structural modifications
32. Careful taking up or down and removing carefully a structure without damage is termed as  
(A) dismantling (B) breaking  
(C) rescheduling (D) direction

33. The centre line method is suitable for walls having  
(A) different cross-sections (B) similar cross-sections  
(C) same weights (D) same materials
34. Which of the following is not a lumpsum item in the estimate?  
(A) Architectural features (B) Water supply and sanitary arrangements  
(C) Masonry items (D) Electrical installations
35. The bottom surface of a door or a window opening is known as a  
(A) Corbel (B) Sill  
(C) Cornice (D) None of these
36. If the diameter of a bolt hole is 20 mm, what would be the nominal diameter?  
(A) 18 mm (B) 20 mm  
(C) 22 mm (D) 30 mm
37. If 'd' is the gross diameter of rivet, then the minimum pitch of the rivets shall not be less than  
(A) 1.5 d (B) 2.0 d  
(C) 2.5 d (D) 3.0 d
38. Effective length of a column effectively held in position and restrained in direction at both ends, is  
(A) L (B) 0.67 L  
(C) 0.85 L (D) 1.5 L
39. Which of these is a type of weld connection?  
(A) Groove (B) Fillet  
(C) Slot (D) All of these
40. Slenderness ratio of a compression member is  
(A) moment of inertia/radius of gyration  
(B) effective length/area of cross-section  
(C) radius of gyration/area of cross-section  
(D) radius of gyration/effective length
41. When an offer with certain terms and conditions is given in written form, it is called as  
(A) Tender (B) Contract  
(C) Agreement (D) Notice
42. In the plinth area method, the cost of construction is computed by the multiplication of  
(A) plinth length and rate (B) plinth breadth and rate  
(C) plinth area and plinth area rate (D) plinth volume and plinth length rate
43. During the construction period, price variation clause in contracts caters to  
(A) increase in rates of only important materials  
(B) variation in cost in materials element, labour element and petrol-oil-lubricant element  
(C) variation in total cost of the project on an ad hoc basis  
(D) rate of inflation

44. To safeguard against a bidder withdrawing or altering his/her bid during the bid validity period, \_\_\_\_\_ shall be obtained from the bidder for all tenders.
- (A) Earnest Money (B) Performance security  
(C) Security deposit (D) Estimate
45. Security deposit is
- (A) deposited at the time of filling tender  
(B) deposited by the contractor whose tender is accepted  
(C) deposited at the time of opening tenders  
(D) deposited for fair competition
46. Which of the following statements is correct?
- (A) Deforestation helps in controlling the greenhouse effect  
(B) Global warming is detrimental for increase in food productivity and may cause flood and cyclone  
(C) Lightening discharges are natural source of production of  $\text{SO}_2$  &  $\text{H}_2\text{S}$  pollutant  
(D) Sulphur dioxide causes death by asphyxiation
47. Which of the following is not a water borne disease?
- (A) Dysentery (B) Cholera  
(C) Typhoid (D) Malaria
48. The disposal of sewage from the septic tank is done by
- (A) Clarifier (B) Aerated Lagoon  
(C) Soak pit (D) Lamp holes
49. The detention period of a septic tank is
- (A) 2 hours (B) 4 hours  
(C) 12 – 36 hours (D) 40 – 60 hours
50. Which of the following values of pH represents a stronger acid?
- (A) 2 (B) 5  
(C) 6 (D) 7
51. Tender is usually given to \_\_\_\_\_ by preparing comparative statement.
- (A) highest bidder  
(B) lowest bidder  
(C) highest bidder with similar work experience  
(D) bidder with maximum work experience
52. The percentage provided for internal electric installations as per MPWD SOR 2019 is
- (A) 10% (B) 5%  
(C) 6 % (D) 12.5%
53. If any extra items are to be executed as a result of change in design, rate for such items are derived from
- (A) Contractor's Price List (B) Market Rate  
(C) Schedule of Rates (D) Provisional Rate

54. In which of the following cases is a contractor not eligible for extension in time?  
(A) Owner failed to pay contractor on time  
(B) Engineer in charge fails to certify the work done within time limit  
(C) Work not done due to monsoon season  
(D) None of the above
55. Damages caused due to delay in work are termed as  
(A) liquidated damages (B) unliquidated damages  
(C) direct damages (D) indirect damages
56. A large work or project may consist of several buildings or small works and each of these works is known as  
(A) sub-work (B) sub-project  
(C) sub-head (D) sub-construction
57. According to Indian Standards Institute, the actual size of modular bricks is  
(A) 23 cm × 11.5 cm × 7.5 cm (B) 25 cm × 13 cm × 7.5 cm  
(C) 19 cm × 9 cm × 9 cm (D) 20 cm × 10 cm × 10 cm
58. The main factor to be considered while preparing a detailed estimate is  
(A) quantity of the materials (B) availability of materials  
(C) transportation of materials (D) all of these
59. Due to change in price level, a revised estimate is prepared if the sanctioned estimate exceeds  
(A) 2.0 % (B) 2.5 %  
(C) 4.0 % (D) 5.0 %
60. Salvage value is sometimes known as  
(A) Scrap value (B) Second-hand value  
(C) Going value (D) Junk value
61. The main principle of surveying is to work from  
(i) center to boundary (ii) whole to part  
(iii) part to whole (iv) lower level to higher level  
Select the correct answer using the codes given below.  
(A) (i) and (iv) (B) (ii) only  
(C) (iii) only (D) (i), (iii) and (iv)
62. Match the following :  
1. The natural soil beneath the road construction : (a) Sub-base  
2. The course placed immediately above the sub-grade : (b) Base  
3. Upper surfacing layer formed by bituminous mixtures : (c) Sub-grade  
4. The course which withstands the high shearing stresses : (d) Wearing course  
Select the correct answer using the codes given below.  
(A) 1 – (c), 2 – (b), 3 – (a), 4 – (d) (B) 1 – (a), 2 – (b), 3 – (c), 4 – (d)  
(C) 1 – (c), 2 – (a), 3 – (b), 4 – (d) (D) 1 – (c), 2 – (a), 3 – (d), 4 – (b)



63. After fixing the plane table to the tripod, the main operations which are needed at each plane table station are  
(i) Levelling                      (ii) Orientation                      (iii) Centering  
The correct sequence of these operations is  
(A) (i), (ii) and (iii)                      (B) (i), (iii) and (ii)  
(C) (iii), (i) and (ii)                      (D) (ii), (iii) and (i)
64. The real image of an object formed by the objective must lie  
(A) in the plane of cross hairs  
(B) at the centre of the telescope  
(C) at the optical centre of the eye-piece  
(D) anywhere inside the telescope
65. Which of the following methods of plane table surveying is used to locate the position of an inaccessible point?  
(A) Radiation                      (B) Intersection  
(C) Traversing                      (D) Resection
66. "Right of way" is the summation of the width of  
(A) carriage way and shoulder                      (B) road margins and shoulder  
(C) carriage way and road margins                      (D) none of these
67. If the design speed is 60 km/h, perception reaction time is 4 sec and the coefficient of friction is 0.5, then the stopping sight distance is  
(A) 60 m                      (B) 95 m  
(C) 110 m                      (D) 115 m
68. For carrying out bituminous patch work during rainy season, the most suitable binder is  
(A) road tar                      (B) hot bitumen  
(C) cut back bitumen                      (D) bituminous emulsion
69. Match the following :
- | <i>Test</i>                  |   | <i>Property</i> |
|------------------------------|---|-----------------|
| 1. Crushing Test             | : | (a) Hardness    |
| 2. Los Angeles abrasion test | : | (b) Weathering  |
| 3. Soundness                 | : | (c) Shape       |
| 4. Angularity                | : | (d) Strength    |
- Select the correct answer using the codes given below.  
(A) 1 – (b), 2 – (a), 3 – (d), 4 – (c)                      (B) 1 – (d), 2 – (b), 3 – (c), 4 – (a)  
(C) 1 – (c), 2 – (b), 3 – (a), 4 – (d)                      (D) 1 – (d), 2 – (a), 3 – (b), 4 – (c)
70. The first coat of bituminous surfacing over an existing base such as WBM is  
(A) seal coat                      (B) prime coat  
(C) tack coat                      (D) intermediate coat
71. The moisture content in a properly seasoned timber will be in the range of  
(A) 5 – 8%                      (B) 12 – 15%  
(C) 8 – 10%                      (D) 10 – 12%

72. The minimum clear cover of column whose diameter of reinforcement is greater than 12 mm is  
(A) 10 mm (B) 20 mm  
(C) 30 mm (D) 40 mm
73. Match the following :
- | <i>Characteristic Strength of Concrete</i> |   | <i>Mix proportion</i> |
|--|---|-----------------------|
| 1. M15                                     | : | (a) 1 : 1 : 2         |
| 2. M20                                     | : | (b) 1 : 1.5 : 3       |
| 3. M25                                     | : | (c) 1 : 2 : 4         |
- Select the correct answer using the codes given below.
- (A) 1 – (b), 2 – (a), 3 – (c) (B) 1 – (c), 2 – (a), 3 – (b)  
(C) 1 – (a), 2 – (b), 3 – (c) (D) 1 – (c), 2 – (b), 3 – (a)
74. Original cost of the property minus depreciation is  
(A) Book value (B) Salvage value  
(C) Rentable value (D) Obsolescence value
75. The term \_\_\_\_\_ is used to denote a procedure of costing or valuing an item of work on the basis of actual labourers and materials required.  
(A) Prime Cost (B) Hour-work  
(C) Day-work (D) Sub-work
76. The props of beam spanning over 6m is to be removed after a minimum of  
(A) 1-2 days (B) 7 days  
(C) 14 days (D) 21 days
77. The damp proof course (DPC) is measured in  
(A) cubic m (B) sq. m  
(C) metres (D) none of these
78. Pick the item of work not included in the plinth area estimate.  
(A) Wall thickness (B) Room area  
(C) Verandah area (D) Courtyard area
79. In long and short wall method of estimation, the length of long wall is the centre-to-centre distance between the walls and  
(A) breadth of the wall  
(B) half breadth of wall on each side  
(C) one-third breadth of wall on each side  
(D) one-fourth breadth of wall on each side
80. The excavation exceeding 1.5 m in width and 10 sq.m in plan area with a depth not exceeding 30 cm, is termed as  
(A) excavation (B) surface dressing  
(C) cutting (D) surface excavation
81. The means of access for inspection and cleaning of sewer line is known as  
(A) Inlet (B) Manhole  
(C) Drop manhole (D) Catch Basin

82. The effect of increase in carbon dioxide level of the atmosphere and its profound effect on our climate is called the  
(A) catalytic conversion (B) greenhouse effect  
(C) global warming (D) both (B) and (C)
83. The type of valve which is provided to control the flow of water in the distribution system at street corners and where the pipe lines intersect is  
(A) check valve (B) sluice valve  
(C) pilot valve (D) globe valve
84. As per Indian Standard the average rate of water consumption per head per day is  
(A) 100 litres (B) 135 litres  
(C) 165 litres (D) 200 litres
85. The process to bring water in intimate contact with atmospheric air is called  
(A) aeration (B) chlorination  
(C) softening (D) filtration

**Directions (Questions 86-87): Complete the analogy:**

86. Bird : Fly :: Snake : ?  
(A) Hole (B) Stroll  
(C) Clatter (D) Crawl
87. Clock : Time :: Thermometer : ?  
(A) Temperature (B) Heat  
(C) Radiation (D) Energy
88. Find the odd one out  
(A) Tiger (B) Leopard  
(C) Snail (D) Fox
89. Find the odd one out  
(A) Mathematics (B) Geometry  
(C) Algebra (D) Trigonometry
90. Choose the pair which has the same relationship as SCISSORS : CLOTH  
(A) Axe : Wood (B) Stone : Grinder  
(C) Knife : stone (D) Gun : hunt

**Directions (Questions 91-96): Find the missing term in the following series:**

91. 10, 30, 90, 270, \_\_\_\_\_, 2430  
(A) 1215 (B) 810  
(C) 805 (D) 1210
92. 3, 7, 16, 32, \_\_\_\_\_, 93  
(A) 53 (B) 57  
(C) 54 (D) 60

93. 2, 6, 12, 20, 30, 42, 56, \_\_\_\_\_  
(A) 61 (B) 64  
(C) 72 (D) 70
94. 22, 27, 34, 43, 54, \_\_\_\_\_  
(A) 73 (B) 82  
(C) 94 (D) 67
95. A, C, F, H, \_\_\_\_\_, M  
(A) L (B) J  
(C) I (D) K
96. OTE, PUF, QVG, RWH, \_\_\_\_\_  
(A) SXI (B) SXJ  
(C) TXI (D) TYJ
97. Arrange the following words in the sequence in which they occur in dictionary :  
1. Charcoal 2. Chorus 3. Canvass 4. Character 5. Catchment  
(A) 5, 3, 1, 4, 2 (B) 3, 5, 1, 4, 2  
(C) 3, 5, 4, 1, 2 (D) 5, 3, 1, 2, 4
98. A man faces towards North, turning to his right, he walks 25 meters. He then turns to his left and walks 30 meters. Next, he moves 25 meters to his right, he then turns to his right again and walks 55 meters. Finally, he turns to the right and moves 40 meters. In which direction is he from his starting point?  
(A) South-West (B) South  
(C) North-West (D) South-East

99. The following question consists of three problems figures. Choose the correct figure from the given alternatives which will continue the problem figures in the same sequence.

**Problem figures**



**Answer figures**



(A)



(B)



(C)



(D)

100. One morning after sunrise, Chhana stood on a balcony looking at a tree. If the shadow of the tree fell exactly to his right, then which direction was he facing?  
(A) South (B) East  
(C) West (D) North

**SPACE FOR ROUGH WORK**

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