

MIZORAM PUBLIC SERVICE COMMISSION

TECHNICAL COMPETITIVE EXAMINATIONS FOR JUNIOR GRADE OF MIZORAM ENGINEERING SERVICE (M.E.S.) UNDER PUBLIC WORKS DEPARTMENT, GOVERNMENT OF MIZORAM, MARCH, 2020

ARCHITECTURE PAPER - I

Time Allowed : 3 hours

FM : 200

SECTION - A (Multiple Choice questions)

(100 Marks)

All questions carry equal mark of 2 each. Attempt all questions.

*This Section should be answered only on the **OMR Response Sheet** provided.*

1. How many types of Linear Perspectives are there?
(a) 2 (b) 3
(c) 4 (d) 5
2. The Saturation level of a colour represents
(a) Distribution (b) Intensity
(c) Darkness (d) Warmth
3. The concepts of 'serial vision', 'punctuation' and 'closure' were proposed by
(a) Le Corbusier (b) Louis Kahn
(c) Gordon Cullen (d) Kevin Lynch
4. Xeriscaping is the type of landscaping that uses plant that need very little
(a) Air (b) Sunlight
(c) Soil (d) Water
5. The plinth area of a building does not include
(a) Area of the walls at floor level (b) Area of stair cover
(c) Lift and wall including landing (d) Area of cantilevered porch
6. If a working drawing is made to a scale of 1 :50, a length of 5.5 metres would be shown on the drawing by a length of
(a) 55 mm (b) 110 mm
(c) 275 mm (d) 550 mm
7. GIS uses the information from which of the following sources?
(a) Non-spatial information system (b) Spatial information system
(c) Global information system (d) Position information system
8. As per National Building Code 2016, the minimum size of a habitable room for plot above 50 m² is
(a) 9.5 m² (b) 10.5 m²
(c) 11.5 m² (d) 12.5 m²

9. How many types of land use patterns are there?
 - (a) 10
 - (b) 20
 - (c) 15
 - (d) 5
10. Who developed concentric- zone theory of city?
 - (a) Louis Wirth
 - (b) E.W Burgess
 - (c) M.N Srinivas
 - (d) M.S.A Rao
11. The movement of people from central cities to smaller communities in the surrounding area is known as
 - (a) Reverse migration
 - (b) Under Urbanisation
 - (c) Suburbanization
 - (d) Over - urbanisation
12. In Land Use Classification, the colour Purple is used to denote
 - (a) Industry
 - (b) Mixed use
 - (c) Commercial
 - (d) Residential
13. As per National Building Code 2016, the height of exit door for Life safety should be at least
 - (a) 1.8 m
 - (b) 2.0 m
 - (c) 2.1 m
 - (d) 2.15 m
14. An element constructed at intervals along the length of a wall to stabilize it against overturning is
 - (a) Barrel Vault
 - (b) Pilaster
 - (c) Squinch Arch
 - (d) Buttress
15. Bauhaus means
 - (a) Building a house
 - (b) Building
 - (c) House of Building
 - (d) None of these
16. What is the best angle for solar panels in the Northern Hemisphere?
 - (a) True South
 - (b) 45° to South
 - (c) 35° to South
 - (d) None of these
17. According to Neufert standards, what is the ideal height of the extractor hood from the counter top?
 - (a) 800 mm
 - (b) 850 mm
 - (c) 900 mm
 - (d) 905 mm
18. How many hierarchy of Roads are there?
 - (a) 3
 - (b) 4
 - (c) 5
 - (d) 6
19. Around — B.C. cities of Mohenjo-Daro and Harappa came into being in the valley of Indus river.
 - (a) 250 B.C
 - (b) 1000 B.C
 - (c) 1500 B.C
 - (d) 3300 B.C
20. 'Finger Plan' concept of urban planning was initially adopted in
 - (a) Copenhagen
 - (b) Canberra
 - (c) Paris
 - (d) Tokyo
21. What was typical of ceilings in Renaissance architecture
 - (a) They were left open
 - (b) They were flat
 - (c) They were arched
 - (d) All of these

22. What is the ratio followed in the Parthenon?
(a) 3 : 8 (b) 3 : 9
(c) 4 : 8 (d) 4 : 9
23. The Golden ratio is
(a) 1:1.618 (b) 1:1.628
(c) 1:1.518 (d) 1:1.528
24. The principle of the Garden City was developed in the 20th century by architect and planner
(a) Frank Lloyd Wright (b) Ebenezer Howard
(c) Frederick Law Olmsted (d) Le Corbusier
25. What is the full form of BIM with reference to construction projects?
(a) Building Information Modelling (b) Building Intelligence Modelling
(c) Builder Information Modelling (d) Building Internal Modelling
26. What is the optimum passage/ corridor width for lying patients' transfer as per standards:
(a) 1.5 m wide minimum (b) 2.0 m wide minimum
(c) 2.8m wide minimum (d) 2.25m wide minimum
27. What is the optimum height of the top of a wash basin?
(a) 800 – 850 mm (b) 850 – 900 mm
(c) 750 – 800 mm (d) 900 – 1000mm
28. What is the working principle associated with Solar Chimney?
(a) Thermal storage (b) Radiant cooling
(c) Stack effect (d) Geothermal energy
29. What is the term 'swale' associated with in landscape architecture?
(a) planting (b) road work
(c) drainage (d) pergolas
30. Charbagh is a garden design concept used in
(a) French gardens (b) English Garden
(c) Persian Gardens (d) Hindu Gardens
31. What is the very ornate architectural style developed in the later Renaissance period?
(a) Baroque (b) Neoclassicism
(c) Flamboyant (d) None of these
32. Frederick Law Olmsted is best known for his design of the New York
(a) Central Park (b) Kew garden
(c) Versailles Garden (d) The Champs Elysee
33. What is not an element of a typical Mughal Garden?
(a) water canals (b) walled enclosures
(c) topiary (d) fruit bearing trees
34. What is the best orientation for the longer axis of a football field?
(a) North west – South east (b) East- West
(c) North east- South west (d) None of these

35. It is one of the principles of design when lines, planes, and surface treatments are repeated in a regular sequence in design:
- (a) balance (b) rhythm
(c) contrast (d) proportion
36. The basic unit of dimension in the Greek and Roman order was:
- (a) the diameter of column. (b) the height of column
(c) capital dimension (d) pediment dimension
37. How many water closets should be provided for an office building in a Male public toilet as per NBC norms?
- (a) 1 for every 25 (b) 1 for every 20
(c) 1 for every 30 (d) 1 for every 20
38. What is the minimum water requirement for domestic needs (residences) of urban communities per head per day as per the NBC apart from flushing requirements?
- (a) 70 – 100 ltrs (b) 60-120 ltrs
(c) 80- 110ltrs (d) 60- 90 ltrs
39. The chief architect involved in the planning of Navi Mumbai
- (a) Gerard da Cunha (b) Charles Correa
(c) Hafeez Contractor (d) B.V. Doshi
40. The name of the Master Plan adopted for Aizawl city is
- (a) Master Plan for Aizawl, Vision 2020 (b) Master Plan for Aizawl, Vision 2030
(c) Master Plan for Aizawl, Vision 2025 (d) None of these.
41. Delonix regia is the botanical name for
- (a) Gulmohur tree (b) Apple Tree
(c) Banyan tree (d) Bauhinia tree
42. What is the full form of V.P in orthographic projection?
- (a) Vanishing Point (b) Vertical Plane
(c) Vanishing Plane (d) Vertical Point
43. Which of the following historical garden style include gently rolling hills and water, ideally planned against a back drop of forest with groupings of trees in the background.
- (a) French Garden (b) English Garden
(c) Mughal Garden (d) None of these
44. The most remarkable feature of the Indus valley civilization of Mohenjo-Daro and Harappa is the
- (a) town planning (b) size of the civilization
(c) culture (d) none of these
45. Pyramids are the best example of
- (a) flood resisting structures (b) dust storm resisting structures
(c) insulating structure (d) earthquake resisting structures
46. Pylon is the Greek term for a monumental gateway of an _____ temple.
- (a) Egyptian (b) Roman
(c) Indian (d) Mughal

47. Who built the first stone domes on a circular plan?
(a) Egyptians (b) Romans
(c) Mesopotamians (d) Eskimos
48. What does Acanthus Leaf often used to decorate Corinthian columns symbolize?
(a) Wealth (b) Prosperity
(c) Long life (d) All of these
49. The use of plant materials and practices that minimizes landscaping water use; usually native plants; environmentally friendly form of landscaping.
(a) xeriscape (b) xeroscape
(c) xeransis (d) xeranthemum
50. Fire extinguisher extinguishes the small fires in the house by using
(a) Carbon dioxide (b) Nitrogen gas
(c) Water (d) Foam

SECTION - B (Short answer type question)
(100 Marks)

All questions carry equal marks of 5 each.

*This Section should be answered only on the **Answer Sheet** provided.*

1. What do you think is the best orientation for an office building in Aizawl? Give reasons with sketches to support your answer.
2. What do you mean by a Zero Energy Building or a Zero Net Energy Building? Name a few design considerations on how to achieve it.
3. Suggest one design intervention for improvement of the Bara Bazar Main road, Aizawl - the stretch between Floria Glamour Hotel and Bungkawn Traffic point. You can use sketches to support your answer.
4. What is the difference between active and passive solar energy?
5. Give short notes on the planning of Chandigarh city. You can give sketches to support your answer.
6. Pick any one public building anywhere in the world which you think is well designed and give your reasons for it.
7. What design considerations would you give for the handicapped in the design of buildings?
8. Landscape architecture has many applications in city planning. Name some of them.
9. Give any three characteristics of Mughal Architecture with examples.
10. What is formal and informal landscaping?
11. Explain the different phases of Burgage Cycle
12. Write the essential difference between a Latin Cross plan and Greek Cross plan
13. What is the meaning of Renaissance? What are the main characteristics of Renaissance Architecture?
14. Explain the different types of Intercolumniation.

15. Match the Concepts in Group I with the personalities in Group II

- | <u>Group I</u> | <u>Group II</u> |
|---------------------------|----------------------|
| (a) Linear city | 1) Ebenezer Howard |
| (b) Radiant city | 2) Homer Hoyt |
| (c) Garden city | 3) Soria Y Mata |
| (d) Concentric zone model | 4) Chauncey Harris |
| (e) Sector model | 5) Ernest W. Burgees |
| | 6) Le Corbusier |

16. Match the settlement type in Group I with their corresponding population in Group II

- | <u>Group I</u> | <u>Group II</u> |
|-----------------|-------------------------|
| (a) Metropolis | 1) Less than 100 |
| (b) Conurbation | 2) More than 10 million |
| (c) Hamlet | 3) 10,000 – 100,000 |
| (d) Large town | 4) 1 – 3 million |
| (e) Megalopolis | 5) 3 – 10 million |
| | 6) 100,000 – 500,000 |

17. Match the furniture in Group I with their standard dimension in Group II

- | <u>Group I</u> | <u>Group II</u> |
|------------------|--------------------|
| (a) Dining table | 1) 400 mm - 450 mm |
| (b) Dining chair | 2) 250 mm – 350 mm |
| (c) Counter top | 3) 350 mm – 400 mm |
| (d) Study chair | 4) 850 mm – 920 mm |
| (e) Arm chair | 5) 750 mm – 780 mm |
| | 6) 450 mm – 480 mm |

18. Match the colours in Group I with their meaning in Group II

- | <u>Group I</u> | <u>Group II</u> |
|------------------------|--------------------------|
| (a) Red | 1) Tone |
| (b) Green | 2) Complementary colours |
| (c) Blue – Green | 3) Primary colour |
| (d) Red – Green | 4) Tint |
| (e) Mixture with white | 5) Secondary colour |
| | 6) Tertiary colour |

19. Match the Buildings / Terms in Group I with their Shapes in Group II

- | <u>Group I</u> | <u>Group II</u> |
|-----------------------|-----------------|
| (a) Oculus | 1) Rectangular |
| (b) St Mark, Venice | 2) Oval |
| (c) Colosseum | 3) Latin Cross |
| (d) Cologne Cathedral | 4) Circle |
| (e) Pediment | 5) Greek Cross |
| | 6) Triangle |

20. Match the Terminologies in Group I with their Description in Group II

- | <u>Group I</u> | <u>Group II</u> |
|----------------|---|
| (a) Pruning | 1) Useful in reproducing plants that would not breed true if propagated by seed |
| (b) Topiary | 2) A live bud from a desired plant inserted into a host plant |
| (c) Grafting | 3) Cutting of evergreen shrubs into abstract or geometric shapes |
| (d) Budding | 4) Trimming and cutting of lawns |
| (e) Refoliate | 5) Selective cutting of plant branches for better growth |
| | 6) New leaves formation |

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