

# MIZORAM PUBLIC SERVICE COMMISSION

## COMPETITIVE EXAMINATIONS FOR RECRUITMENT TO THE POST OF SURVEYOR-I UNDER LAND REVENUE & SETTLEMENT DEPARTMENT, GOVERNMENT OF MIZORAM, JUNE -2019

### PAPER - I

Time Allowed : 2 hours

Full Marks : 150

*All questions carry equal marks of 2 each.*

*Attempt all questions.*

1. The principle(s) of survey includes :
  - (a) Working from whole to part
  - (b) Working from part to whole
  - (c) Both (a) & (b)
  - (d) None of these
2. The biggest of the survey line is called :
  - (a) First line
  - (b) Base line
  - (c) Tie line
  - (d) Main survey line
3. The type of surveying which requires least office work is :
  - (a) Tacheometry
  - (b) Trigonometrical leveling
  - (c) Plane table surveying
  - (d) Theodolite Surveying
4. The highest grade of triangulation which is employed for the determination of the shape and figure of the earth and other geodetic investigations is :
  - (a) Primary or First Order Triangulation
  - (b) Secondary or Second Order Triangulation
  - (c) Tertiary or Third Order Triangulation
  - (d) Exploratory or Fourth Order Triangulation
5. Reconnaissance survey is being carried out in :
  - (a) Office
  - (b) Field
  - (c) Office followed by field work
  - (d) Field Work followed by office
6. Digital land surveying conducted in sequence of :
  - (a) Establishment of control point, Collection of field details, Automated mapping
  - (b) Collection of field details, Establishment of control point, Automated mapping
  - (c) Establishment of control point, Automated mapping, Collection of field details
  - (d) Automated mapping, Collection of field details, Establishment of control point
7. Most important consideration for preparation of map is :
  - (a) Scale
  - (b) Plotting accuracy
  - (c) Generalisation of details
  - (d) Contour interval.
8. For a well-conditioned triangle, no angle should be less than :
  - (a) 20°
  - (b) 30°
  - (c) 45°
  - (d) 60°

9. Theodolite is an instrument used for :
- (a) Tightening the capstan-headed nuts of level tube
  - (b) Measurement of horizontal angles only
  - (c) Measurement of vertical angles only
  - (d) Measurement of both horizontal and vertical angles
10. A Total Station is a combination of :
- (a) EDM and Theodolite
  - (b) Compass and EDM
  - (c) Electronic Theodolite and EDM
  - (d) EDM and Electronic Compass
11. Which unit in Total Station processes data collected :
- (a) Data Collector
  - (b) EDM
  - (c) Storage System
  - (d) Microprocessor
12. The bubble in Total Station is centralised using:
- (a) Tripod
  - (b) Levelling Screw
  - (c) Tangent Screw
  - (d) Foot Screw
13. Survey stations may be marked on the ground using a:
- (a) Pole
  - (b) Rod
  - (c) Pointer
  - (d) Peg
14. GPS System derives position in \_\_\_\_\_ coordinates and then, converts it to \_\_\_\_\_ coordinates.
- (a) WGS84 geodetic, WGS84 Cartesian
  - (b) WGS84 Cartesian, WGS84 Geodetic
  - (c) Global Geodetic, Global Cartesian
  - (d) Local Cartesian, Local Cartesian
15. Conditions for most accurate GPS positioning are:
- i) Basic positioning
  - ii) Baseline processing
  - iii) Broadcast Ephemerides
  - iv) Scientific Software
- (a) Only i
  - (b) Both ii & iii
  - (c) Only iii
  - (d) i, ii & iv
16. A benchmark is :
- (a) Point whose elevation is known
  - (b) Point which is used as a check
  - (c) Both (a) & (b)
  - (d) None of these
17. The accuracy depends on :
- (a) Precise instruments
  - (b) Good planning
  - (c) Precise Methods
  - (d) All of these
18. Contour interval is :
- (a) inversely proportional to the scale of map
  - (b) directly proportional to the flatness of ground
  - (c) larger for accurate works
  - (d) larger if the time available is more
19. The process of converting analogue continuous document to digital form is called :
- (a) Digitised
  - (b) Scanning
  - (c) Video making
  - (d) Labelling

20. Geo-referencing of raster images can be done in \_\_\_\_ ways:  
(a) Six (b) Two  
(c) Three (d) Four
21. How many location photographs are required(at least)for photogrammetry :  
(a) 1 (b) 2  
(c) 3 (d) 4
22. What is the fundamental principle of photogrammetry :  
(a) Inference (b) Resection principle  
(c) Triangulation (d) Intersection principle
23. What is the type of photograph if the tilt of the axis of camera from the plump line is 2 degrees :  
(a) Horizontal photograph (b) Oblique photograph  
(c) Tilted photograph (d) Vertical photograph
24. What does close range Photogrametry called in computer vision community :  
(a) Topographic modeling (b) Image-based modeling  
(c) Aerial photogrametry (d) Engineering photogrametry
25. Which of the following option is true for given statements about photogrammetry :  
Statement I : Both aerial and terrestrial photogrammetry are used in urban planning.  
Statement II : Terrestrial photogrammetry is more suitable for movement related issues.  
(a) T,T (b) F,F  
(c) F,T (d) T,F
26. Which photogrammetry methods has topographical mapping as a common application :  
(a) Interpretative photogrammetry (b) Metric photogrammetry  
(c) Aerial photogrammetry (d) Space photogrammetry
27. Which instrument lets an operator see two photos at once :  
(a) Goniometer (b) Collimator  
(c) Theodolite (d) Stereo plotter
28. Which one of the following statements regarding remote sensing is correct :  
(a) The interaction of the electromagnetic radiation with the target.  
(b) The emission of electromagnetic radiation from the target.  
(c) Both (a) & (b)  
(d) Neither (a) nor (b)
29. Remote sensing technique make use of the properties of \_\_\_\_\_ emitted, reflected or diffracted by the sensed objects :  
(a) Electric waves (b) Sound waves  
(c) Electromagnetic waves (d) Wind waves
30. The interaction of the electromagnetic radiation produced with a specific wavelength to illuminate a target on the terrain for studying its scattered radiance, is called :  
(a) Passive remote sensing (b) Active remote sensing  
(c) Neutral remote sensing (d) None of these
31. Electromagnetic spectrum contains :  
(a) Gamma rays(Wave length < 10-10m) (b) Ultraviolet rays(Wave length <10-6m)  
(c) Infrared rays(Wave length < 10 – 4m) (d) All of these

32. The normal altitude of GPS satellite is about :
- (a) 16,200 km (b) 20,200 km  
(c) 24,400km (d) 36,400km
33. The code based GPS receivers are generally used for :
- (a) Vehicle tracking (b) Land navigation  
(c) Trans movement (d) All of these
34. The arrangement of terrain features which provides attributes: the shape, size and texture of objects is called :
- (a) Spectral variation (b) Spatial variation  
(c) Temporal variation (d) None of these
35. DGPS is based on the concept that bias errors in the position of locations in a given local area, are same if their distances are within :
- (a) 25km (b) 15km  
(c) 75km (d) 100km
36. The instruments which provide electromagnetic radiation of specified wave length or a band of wave length to illuminate the earth surface are called :
- (a) Sensors (b) Passive sensors  
(c) Active sensors (d) None of these
37. Orbital radius of GPS satellites is approximately :
- (a) 15,200km (b) 26,600km  
(c) 18,400km (d) 36,000km
38. The most widely used antenna in GPS is :
- (a) Parabolic antenna (b) Microstrip antenna  
(c) Horn antenna (d) Slotted antenna
39. Who coined the term '*Remote Sensing*' :
- (a) Evelyn L. Pruitt, a geographer  
(b) Gaspard Felix Tournachon, a French Scientist  
(c) Wilbur Wright, an Italian Scientist  
(d) None of these
40. An end to end digital photogrammetric workstation needs :
- (a) GIS/CAD display system (b) High end system  
(c) Scan controller (d) All of the above
41. Which one of the following is a Horizontal datum :
- (a) Mean Sea Level (b) WGS84  
(c) Geoid (d) Geopotential number
42. The world is divided into \_\_\_\_\_ equal parts :
- (a) 90 E-W (b) 45 E-W  
(c) 60 E-W (d) 180 E-W
43. Projection used for Cadastral map is :
- (a) Polyconic Projection (b) Cassini Projection  
(c) UTM Projection (d) Mercator Projection

44. In which of the following projection the property of equal area is maintained :
- (a) Polyconic projection
  - (b) International
  - (c) Bonne's projection
  - (d) Conical projection with two standard parallel
45. Which of the following projection is suitable for areas like the Indian, Pacific and Atlantic Oceans?
- (a) Cylindrical equal area projection
  - (b) Stereographic Cylindrica projection
  - (c) Equal area projection of stereographic normal zenithal
  - (d) Conical projection
46. \_\_\_\_\_ does not belong to the category of cartographic elements of a map :
- (a) Grid
  - (b) Bar scale
  - (c) Cardinal direction
  - (d) Legends
47. Which one of the following Coordinate system is not used in Geodesy :
- (a) Geocentric Cartesian Coordinates
  - (b) Horizontal Coordinates
  - (c) Geodetic Coordinates
  - (d) Planimetric Cartesian coordinates
48. Planimetric Cartesian Coordinates are often called :
- (a) Eastings and Northings
  - (b) Latitude and Longitude
  - (c) Everest
  - (d) Local Geodetic
49. There are four types of feature present on a map :
- (a) Point, line, area and weight
  - (b) Point, line, area and text
  - (c) Point, line, area and colour
  - (d) Point, line, area and level
50. Spatial data can be represented digitally by means of two so called :
- (a) Coordinates and Raster
  - (b) Vector and Collected data
  - (c) Vector and Coordinates
  - (d) Vector and Raster
51. The following are the phases of digitization upto creation of DTDB (Digital Topographical Data Base) :
- (a) Document processing, Digitizing, Attribute Entry, Archiving
  - (b) Digitizing, Document processing, Attribute Entry, Archiving
  - (c) Document processing, Attribute Entry, Digitizing, Archiving
  - (d) Digitizing, Attribute Entry, Archiving, Document processing
52. What are the four ways to manipulate a map projection :
- (a) Coordinate manipulation, spheroid simplification, aspect, geometric form
  - (b) Aspect, case, light source, geometric form
  - (c) Gravity, light source, spheroid simplification, aspect
  - (d) None of these
53. Cartographer use the term "Cutpoint" to :
- (a) to refer to the neatline on a map
  - (b) to refer to category boundaries
  - (c) that will be trimmed in a bound volume
  - (d) a method for displaying equal distribution of data

54. Which of the following datum can be used anywhere in the world for accurate mapping :
- (a) WGS 1983 and NDA 1927
  - (b) WGS 1972 and NAD 1984
  - (c) NAD 1927 and NAD 1983
  - (d) None of these
55. What is a Geodetic Datum?
- (a) The Latitude and Longitude of Meades Ranch, Kansas, the NAD 27 origin
  - (b) The data point that defines the location of Greenwich, England
  - (c) A theoreticam map project designed to provide accurate scale over the entire surface of an oblate
  - (d) The set of parameters that define the size and shape of the earth and the origin of coordinate system that describe position on the earth.
56. Which one of the following option is not the objective of Cadastral Survey :
- (a) To prepare a map of the plots of land for each village, town or city showing their position, boundaries and survey numbers.
  - (b) To identify and demarcate village boundaries.
  - (c) To prepare contour map
  - (d) To compile proper written records of the rights of ownership and fix rates of land taxes, recorded in the 'Khasra' of land records.
57. Tax Cadastre is under the classification on the basis of :
- (a) Purpose of Survey
  - (b) Method of survey
  - (c) Legal Characteristics of Records
  - (d) None of these
58. Name one of the direct method of Cadastral Survey :
- (a) Graphical Method
  - (b) Photogrammetric Method
  - (c) Remote Sensing Method
  - (d) None of these
59. The Survey operation in which theoretical coordinates position is located on the ground with the help of angular and linear measurements are called the method of :
- (a) Locating missing pillar
  - (b) Relaying Missing Pillar
  - (c) Relocating missing pillar
  - (d) Remote sensing
60. Name one of the instrumental method of Cadastral Survey :
- (a) Chain Survey
  - (b) Aerial Survey
  - (c) Total station Survey
  - (d) Plane Table Survey
61. The assestment of Tax is based on :
- (a) Management of land
  - (b) Market value of the land
  - (c) Boundary description of the land
  - (d) The area of the land
62. ArcMap is :
- (a) An independent software for automated mapping
  - (b) A module of ArcGIS for automated mapping
  - (c) A CADD software
  - (d) A design software for automated mapping
63. GIS Stands for :
- (a) Geographic Information System
  - (b) Generic Information system
  - (c) Geological Information System
  - (d) Geographical Information Sharing

64. In the world of GIS, another term for the property of connectivity is :
- (a) Proximity (b) Neighbourhood  
(c) Topology (d) Location
65. GIS deals with which kind of data :
- (a) Numeric data (b) Binary data  
(c) Spatial data (d) Complex data
66. What is 'Metadata'?
- (a) It is 'data about data' (b) It is 'meteorological data'  
(c) It is 'oceanic data' (d) It is 'contour data'
67. 'Spatial databases' are also known as :
- (a) Monodatabases (b) Geodatabases  
(c) Concurrent databases (d) None of these
68. Which of the following is related to GIS :
- (a) Euclidean space (b) Ramanujan space  
(c) Pythagorean space (d) None of these
69. A (geographic) field is a geographic phenomena for which, for every point in the study area :
- (a) A value can be determined (b) A value cannot be determined  
(c) A value is not relevant (d) A value is missing
70. Which one of the following is the example of 'geographic fields' :
- (a) Air temperature (b) Barometric pressure  
(c) Elevation (d) All of these
71. Which of the following statements are true :
- (a) Natural phenomena are usually *fields* (b) Man-made phenomena are usually *objects*  
(c) Both (a) & (b) (d) None of these
72. Which of the following are full fledged GIS packages :
- (a) ILWIS (b) GeoMedia  
(c) ArcGIS (d) All of these
73. DBMS stands for :
- (a) Database Management System (b) Database Monitoring System  
(c) Database Manufacturing System (d) Database Mixing System
74. SDI stands for :
- (a) Spacial Data Interface (b) Spacial Data Infrastructure  
(c) Spacial Data Intention (d) Spacial Data International
75. Which of the following is true about DBMS :
- (a) A DBMS provides a high level, 'declaration query language'  
(b) A DBMS supports the use of a 'data model'  
(c) A DBMS includes 'data backup' and 'recovery' functions to ensure data availability at all times  
(d) All of these