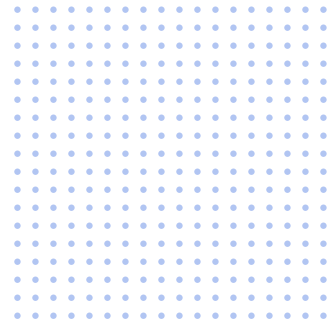




FOR KUET EXAM PREPARATION

KUET 2024

Question Paper · M.Sc. Geoinformatics

EXAM	YEAR	TYPE	SUBJECT
KUET	2024	Question Paper	M.Sc. Geoinformatics

Sr. No. **081****ENTRANCE TEST-2024****SCHOOL OF EARTH & ENVIRONMENTAL SCIENCES****GEOINFORMATICS**

Total Questions : 60
Time Allowed : 70 Minutes

Question Booklet Series

A

Roll No. :

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Instructions for Candidates :

1. Write your Entrance Test Roll Number in the space provided at the top of this page of Question Booklet and fill up the necessary information in the spaces provided on the OMR Answer Sheet.
2. OMR Answer Sheet has an Original Copy and a Candidate's Copy glued beneath it at the top. While making entries in the Original Copy, candidate should ensure that the two copies are aligned properly so that the entries made in the Original Copy against each item are exactly copied in the Candidate's Copy.
3. All entries in the OMR Answer Sheet, including answers to questions, are to be recorded in the Original Copy only.
4. Choose the correct / most appropriate response for each question among the options A, B, C and D and darken the circle of the appropriate response completely. The incomplete darkened circle is not correctly read by the OMR Scanner and no complaint to this effect shall be entertained.
5. Use only blue/black ball point pen to darken the circle of correct/most appropriate response. In no case gel/ink pen or pencil should be used.
6. Do not darken more than one circle of options for any question. A question with more than one darkened response shall be considered wrong.
7. There will be '**Negative Marking**' for wrong answers. Each wrong answer will lead to the deduction of 0.25 marks from the total score of the candidate.
8. Only those candidates who would obtain positive score in Entrance Test Examination shall be eligible for admission.
9. Do not make any stray mark on the OMR sheet.
10. Calculators and mobiles shall not be permitted inside the examination hall.
11. Rough work, if any, should be done on the blank sheets provided with the question booklet.
12. OMR Answer Sheet must be handled carefully and it should not be folded or mutilated in which case it will not be evaluated.
13. Ensure that your OMR Answer Sheet has been signed by the Invigilator and the candidate himself/herself.
14. At the end of the examination, hand over the OMR Answer Sheet to the invigilator who will first tear off the original OMR sheet in presence of the Candidate and hand over the Candidate's Copy to the candidate.

SP-4720-A

1
[X]

[Turn over]

SEAL

1. Which one is not a characteristic of a Database Management System ?
 (A) Structured data
 (B) Redundancy of data
 (C) Access, modification and retrieval of data
 (D) Controlled data sharing
2. Which one of the following is not a computer networking device ?
 (A) Modem
 (B) Router
 (C) Switch
 (D) Ping
3. Which one is the correct combination ?
 (A) SPSS, MATLAB, R
 (B) Photoshop, Ubuntu, Paint
 (C) Erdas, ENVI, Powerpoint
 (D) Python, Java, Raster
4. $(1011)_2 + (10001)_2 =$
 (A) 11012
 (B) 11011
 (C) 11100
 (D) 11010
5. Arrange the parts of the interior of the Earth in ascending order of thickness.
 (A) Crust, Mantle, Outer Core, Inner Core
 (B) Inner Core, Outer Core, Mantle, Crust
 (C) Crust, Inner Core, Outer Core, Mantle
 (D) Crust, Mantle, Inner Core, Outer Core
6. The Kashmir Valley comprises rocks ranging in age from Salkhala to Recent. The Salkhala is of :
 (A) Cambrian Age
 (B) Pre-Cambrian Age
 (C) Devonian Age
 (D) Ordovician Age
7. Which one of the following is not a minor plate ?
 (A) Arabian
 (B) Fuji
 (C) Nazca
 (D) Antarctica
8. The following is topographic evidence of the rejuvenation of a river :
 (A) Change in valley slope
 (B) Valley cut within a valley
 (C) River terrace
 (D) Incised meanders
9. Land Capability Classification has been developed by :
 (A) National Remote Sensing Agency
 (B) Indian Council of Agricultural Research
 (C) United States Department of Agriculture
 (D) National Bureau of Soil Survey & Land Use Planning
10. The downward translocation of humus, clay particles, mineral oxides, and calcium carbonate from an upper horizon to a lower horizon of soil is called :
 (A) Salinization
 (B) Illuviation
 (C) Transpiration
 (D) Eluviation

11. Badland topography is a result of :
 (A) Tectonism
 (B) Erosion
 (C) Cultivation
 (D) Siltation
12. Which one of the following practices hampers soil conservation ?
 (A) Overgrazing
 (B) Contour farming
 (C) Terrace farming
 (D) Strip Cropping
13. The following electromagnetic band pairs are used for Normalized Difference Vegetation Index (NDVI) Calculation :
 (A) Green and Red
 (B) Red and Blue
 (C) NIR and Green
 (D) Red and NIR
14. Which of the following is a topographic map's largest scale?
 (A) 1:25,000
 (B) 1:50,000
 (C) 1:100,000
 (D) 1:250,000
15. Which one of the following systems uses the vector and raster data ?
 (A) Remote Sensing System
 (B) Geographic Information System
 (C) Global Positioning System
 (D) Both (A) and (B)
16. The LISS-IV sensor was first introduced with :
 (A) CARTOSAT
 (B) SENTINEL
 (C) RESOURCESAT
 (D) SPOT
17. The portion of the discharge of a stream contributed by groundwater seepage is called :
 (A) Base flow
 (B) Interflow
 (C) Surface runoff
 (D) Lag
18. Which parameters are used to construct hydrographs ?
 (A) Stream discharge vs Time
 (B) Time vs Area
 (C) Distance vs Time
 (D) Stream discharge vs Area
19. Which is not an instrument to measure rainfall ?
 (A) Rain gauge
 (B) Tipping bucket
 (C) Hypsometer
 (D) Udometer
20. The landform created during overbank flooding, when sand and silt are deposited next to the channel, creating belts of higher land on either side of the channel, is called :
 (A) Backswamp
 (B) Playa
 (C) Bluff
 (D) Levee

21. In the 2030 Agenda for Sustainable Development, the 7th Goal is :
 (A) Zero Hunger
 (B) Climate Action
 (C) Affordable and Clean Energy
 (D) Gender Equality
22. As per the latest Seismic Zonation map given by the Bureau of Indian Standards, Jammu and Kashmir falls under :
 (A) Zone III and IV
 (B) Zone IV and V
 (C) Zone III and V
 (D) Zone II and III
23. The host Country of World Environment Day 2024 was :
 (A) The Kingdom of Saudi Arabia
 (B) South Africa
 (C) Brazil
 (D) Geneva
24. The highest proportion of the total water used in the Country is in the following sector :
 (A) Irrigation
 (B) Industries
 (C) Domestic Use
 (D) Commercial
25. The most dominant forest cover of Jammu and Kashmir is :
 (A) Lower or Siwalik Chir Pine Forest
 (B) Western Mixed Coniferous Forest
 (C) Moist Deodar Forest (Cedrus)
 (D) West Himalayan Sub-Alpine Fir Forest
26. In which district Lignite is found in Jammu and Kashmir ?
 (A) Doda
 (B) Kulgam
 (C) Kathua
 (D) Kupwara
27. A line on a weather chart joining places of equal wind velocity is called :
 (A) Isorhyme
 (B) Isopach
 (C) Isotach
 (D) Isoneph
28. Karewas soil of Kashmir Valley is most suitable for cultivation of :
 (A) Potato
 (B) Saffron
 (C) Coconut
 (D) Groundnut
29. A variant of the sequence of nucleotides at a particular location, or locus, on a DNA molecule is called:
 (A) Genotype
 (B) Phenotype
 (C) Chromosome
 (D) Allele
30. A flower with radial symmetry is called :
 (A) Actinomorphic
 (B) Zygomorphic
 (C) Ebracteate
 (D) Epigynous

31. Which ecosystem has the maximum biomass ?
- Grassland ecosystem
 - Pond ecosystem
 - Forest ecosystem
 - Lake ecosystem
32. Which one is not a form of transpiration in plants ?
- Radical transpiration
 - Cuticular transpiration
 - Lenticular transpiration
 - Stomatal transpiration
33. In a neuron, Schwann Cells, Node of Ranvier and Myelin sheath are part of :
- Cell body
 - Axon
 - Dendrites
 - All of the above
34. Which one is not true for Selva Forests ?
- Tall broad-leaved trees
 - Change the colour of leaves during autumn
 - Found in tropical rainforests
 - Typical of the Amazon basin
35. The gaseous exchange in alveoli is a type of :
- Simple diffusion
 - Osmosis
 - Active transport
 - Passive transport
36. The correct order of endocrine glands from head to toe of a human body is :
- Adrenal, Thyroid, Thymus, Pituitary
 - Thymus, Pituitary, Pancreas, Adrenal
 - Thyroid, Pancreas, Adrenal, Pituitary
 - Pituitary, Thyroid, Thymus, Pancreas
37. In a manned satellite, people experience no gravity, and it is known as :
- Gravity-weight
 - Gravitational weight
 - Weightlessness
 - Less-weight gravity
38. Which of the following proves that electromagnetic waves are transverse ?
- Reflection
 - Diffraction
 - Interference
 - Polarisation
39. Which of the following statements is not true ?
- When an electric wire is heated, its resistance decreases
 - Heating increases the collisions between free electrons and atoms in the wire
 - Resistance can be calculated using Ohm's Law
 - Metals have low resistivities
40. The rate of evaporation is inversely proportional to :
- Surface area
 - Wind speed
 - Humidity
 - Temperature

41. An aqueous solution turns the red litmus solution blue. Excess addition of which of the following solutions would reverse the change ?
 (A) Baking powder
 (B) Lime
 (C) Ammonium hydroxide solution
 (D) Hydrochloric acid
42. An isolated system :
 (A) is one in which mass within the system is not necessarily constant
 (B) cannot transfer either energy or mass to or from the surroundings
 (C) is a region of constant mass, and only energy is allowed through the closed boundaries
 (D) is a specified region where the transfer of energy and mass takes place
43. Which one of the following statements is not true ?
 (A) An oxidation process always needs the presence of oxygen
 (B) When a reactant loses electrons during a reaction, it is called oxidation
 (C) When a reactant accumulates electrons during a reaction, it is called reduction
 (D) In a redox reaction, reduction and oxidation occur simultaneously
44. Which of the following pairs represents isobars ?
 (A) $^3\text{He}_2$ and $^4\text{He}_2$
 (B) $^{24}\text{Mg}_{12}$ and $^{25}\text{Mg}_{12}$
 (C) $^{40}\text{K}_{19}$ and $^{40}\text{Ca}_{20}$
 (D) $^{40}\text{K}_{19}$ and $^{39}\text{K}_{19}$
45. The amount of energy, as it is transferred from one trophic level to another in an ecosystem :
 (A) Remains constant
 (B) Decreases
 (C) Increases
 (D) Has no definite relationship
46. Which of the following are ecological services ?
 (A) O_2 fixation, CO_2 release and pollution
 (B) Nitrogen fixation and pollution
 (C) CO_2 fixation, O_2 release and pollination
 (D) CO_2 fixation, fertilization and the release of sodium
47. Respiration and photosynthesis are central to the following :
 (A) Nitrogen cycle
 (B) Phosphorous cycle
 (C) Carbon cycle
 (D) Sulphur cycle
48. Which basin in the Indian Himalayas has the maximum number of glaciers ?
 (A) Shyok
 (B) Tista
 (C) Chenab
 (D) Indus
49. The formation of fronts is possible due to :
 (A) Convergence of contrasting air masses
 (B) Divergence of contrasting air masses
 (C) Convergence of similar air masses
 (D) Divergence of similar air masses
50. Which one of the following statements is not true ?
 (A) Climate change is real and human activities are the main cause
 (B) Rising sea level is a direct impact of climate change
 (C) CO_2 is a more powerful pollutant than Methane with Global Warming potential
 (D) The concentration of Greenhouse gases in the Earth's atmosphere is directly linked to the average global temperature on Earth

51. Which of the following is a non-renewable source of energy ?
 (A) Hydal
 (B) Solar
 (C) Sea Wave
 (D) Fossil Fuels
52. The coldest region of the atmosphere :
 (A) Troposphere
 (B) Thermosphere
 (C) Stratosphere
 (D) Mesosphere
53. If the mean of a dataset is 50 and the standard deviation is 10, what is the coefficient of variation ?
 (A) 2%
 (B) 10%
 (C) 20%
 (D) 50%
54. Among these, which sampling is based on equal probability ?
 (A) Probability sampling
 (B) Stratified random sampling
 (C) Systematic sampling
 (D) Simple random sampling
55. Kurtosis is a measure of the tailedness of a distribution. Distributions with high kurtosis (or fat tails) are called :
 (A) Mesokurtic
 (B) Leptokurtic
 (C) Platykurtic
 (D) Hypokurtic
56. A trend line that shows the most accurate relationship between x and y describes :
 (A) Linear regression
 (B) No correlation
 (C) Clusters
 (D) Line of best fit
57. The 21st term of Arithmetic Progression, whose first two terms are - 3 and 4, is :
 (A) 17
 (B) 137
 (C) 143
 (D) -143
58. $\begin{bmatrix} 0 & 1 & -2 \\ -1 & 0 & 3 \\ 2 & -3 & 0 \end{bmatrix}$ is an example of :
 (A) Skew symmetric matrix
 (B) Null matrix
 (C) Symmetric matrix
 (D) Identity matrix
59. $y(2y + 3) = y^2 + 1$ is a :
 (A) Quadratic equation
 (B) Cubic equation
 (C) Linear equation
 (D) Rational equation
60. If $(1/8!) + (1/9!) = (x/10!)$, $x = ?$
 (A) 72
 (B) 100
 (C) 90
 (D) 81