ENTRANCE EXAMINATION FOR ADMISSION, MAY 2012.

M.Sc. (DISASTER MANAGEMENT)

COURSE CODE : 379

Register Number :

Signature of the Invigilator
(with date)

COURSE CODE : 379

Time : 2 Hours   Max : 400 Marks

Instructions to Candidates :

1. Write your Register Number within the box provided on the top of this page and fill in the page 1 of the answer sheet using pen.

2. Do not write your name anywhere in this booklet or answer sheet. Violation of this entails disqualification.

3. Read each of the question carefully and shade the relevant answer (A) or (B) or (C) or (D) or (E) in the relevant box of the ANSWER SHEET using HB pencil.

4. Avoid blind guessing. A wrong answer will fetch you –1 mark and the correct answer will fetch 4 marks.

5. Do not write anything in the question paper. Use the white sheets attached at the end for rough works.

6. Do not open the question paper until the start signal is given.

7. Do not attempt to answer after stop signal is given. Any such attempt will disqualify your candidature.

8. On stop signal, keep the question paper and the answer sheet on your table and wait for the invigilator to collect them.

9. Use of Calculators, Tables, etc. are prohibited.

1. Which of the following is the lightest metal?
   (A) Mercury   (B) Silver
   (C) Lithium   (D) Lead

2. The most important ore of Aluminium is
   (A) Bauxite   (B) Calamine
   (C) Calcite   (D) Galena

3. The element present in the largest amount in rocks and minerals is -
   (A) Carbon   (B) Silicon   (C) Hydrogen   (D) Aluminium

4. Air is a/an
   (A) Compound   (B) Element   (C) Mixture   (D) Electrolyte

5. Balloons are filled with
   (A) Helium   (B) Oxygen   (C) Nitrogen   (D) Argon

6. The most abundant metal in the earth's crust is -
   (A) Zinc   (B) Copper   (C) Aluminium   (D) Iron

7. Which form of phosphorus is used in safety metals?
   (A) Red Phosphorus   (B) White Phosphorus
   (C) Yellow Phosphorus   (D) Black Phosphorous

8. Which are air pollutants?
   (A) Aerosols   (B) Sewage   (C) DDT   (D) Fertilizers

9. Which of the following does not cause soil erosion?
   (A) Wind   (B) Overgrazing (C) Sun   (D) Water

10. An example of a renewable resource is:
    (A) clay   (B) sand   (C) water   (D) fossil fuels

11. Pollution is not caused by the use of:
    (A) solar energy   (B) wood
    (C) petrol   (D) unsaturated hydrocarbons

12. Ozone layer in the upper atmosphere is destroyed by:
    (A) HCl   (B) Smog
    (C) Chlorofluorocarbons   (D) SO_2

13. The gas associated with global warming is:

(A) CO_2 (B) H_2S (C) CH_4 (D) SO_2

14. In water pollution, industries are said to be the:

(A) line sources
(B) point sources
(C) area sources
(D) none of these

15. Which of these is biodegradable?

(A) Cow dung
(B) Polythene
(C) Coke cans
(D) DDT

16. What is the area, in square feet, of the triangle whose sides have lengths equal to 10, 6 and 8 feet?

(A) 480
(B) 24
(C) 48
(D) 30
(E) 40

17. Which State has lowest density of population in India?

(A) Arunachal pradesh
(B) Rajasthan
(C) J&K
(D) Nagaland

18. Highest peak in the Sahyadris is

(A) Mount Abu
(B) Dodabetta
(C) Kalsubai
(D) Kanchan Junga

19. Total cultivated area of the country under rice cultivation is approx

(A) 12%
(B) 22%
(C) 32%
(D) 38%

20. The oil fields of Naharkatia are in the state of

(A) Assam
(B) Sikkim
(C) Manipur
(D) Arunachal Pradesh

21. In Bengal, thunderstorms are called

(A) Toofan
(B) Kalbaishakhi
(C) Tornado
(D) Twister

22. Which of Following is NOT a River raising in Himalayas?

(A) Ganga
(B) Satluj
(C) Damodar
(D) Indus

23. Karwar port is a recently developed major port in
    (A) Karnataka   (B) Tamil Nadu
    (C) Kerala   (D) Andhra Pradesh

24. Which of Following Countries is not a member of SAARC?
    (A) Pakistan   (B) Bangladseh
    (C) Bhutan   (D) China

25. Water covers about what percentage of the earth's surface
    (A) 53%   (B) 62%
    (C) 67%   (D) 71%

26. How many liters of water does it take to produce one liter of bottled water?
    (A) 1   (B) 2
    (C) 3   (D) 4

27. Where is most of the world's freshwater located?
    (A) aquifers   (B) glaciers and ice sheets
    (C) lakes and rivers   (D) artificial reservoirs

28. Which gulf is Athens adjacent to?
    (A) Korinthiakos   (B) Argolikos
    (C) Thermaikos   (D) Saronikos

29. The permanent secretariat of the SAARC is located at
    (A) Kathmandu   (B) India
    (C) Dhaka   (D) Lahore

30. The gateway to the Gulf of Iran is
    (A) Gulf of Parsian   (B) Strait of Hormuz
    (C) Middle Strait   (D) None of the above

31. Which of the following is not a greenhouse gas?
    (A) Carbon dioxide   (B) Methane
    (C) Nitrous oxide   (D) Argon

32. A submarine mountain rising more than 1000 metres above the ocean floor is known
    as
    (A) Sea mounts   (B) Abyssal hill
    (C) Guyots   (D) Submarine ridge

33. The ocean relief is generally
    (A) more diverse than that of the continents
    (B) more uniform than that of the continents
    (C) showing minor variations only
    (D) not much of significance

34. Which of the following conditions are associated with El Nino phenomena?
    (A) Heavy rains in South America and droughts in Australia
    (B) Droughts in South America and heavy rains in Australia
    (C) Heavy rains in both South America and Australia
    (D) Droughts in both South America and Australia

35. Which of the following is the highest plateau in the word?
    (A) Colorado Plateau   (B) Pamir Plateau
    (C) Patagonia Plateau   (D) Potwar Plateau

36. Niagara Falls is in
    (A) Australia   (B) U.K.
    (C) South Africa   (D) USA

37. Which of the following pairs is not correctly matched?
    (A) Algeria - Niger   (B) Brazil - Amazon
    (C) Iraq - Tigris   (D) Myanmar – Irrawady

38. The average elevation of Tibetan Plateau above sea level is?
    (A) 2 Km   (B) 3 Km   (C) 4 Km   (D) 5 Km

39. Which of the following is the deepest lake?
    (A) Lake Victoria   (B) Caspian Sea
    (C) Lake Superior   (D) Lake Baikal

40. Which of the following is wrongly matched?
    (A) Baghdad - Tigris   (B) Cairo - Rhine
    (C) London - Thames   (D) New York - Hudson

41. The Great Barrier Reef is
    (A) Conglomeration of corals in Australian waters
    (B) Mountain range in Utajh, U.S.A.
    (C) Salt hills of Afghanistan
    (D) Sub-oceanic mountain in South China Sea

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42. Fertility of soil can be improved by
   (A) Adding living earthworms
   (B) Adding dead earthworms
   (C) Removing dead earthworms
   (D) Removing living earthworms and adding dead earthworms

43. World's largest producer of jute is
   (A) Bangladesh   (B) Burma
   (C) India   (D) Pakistan

44. Which of the following countries consumes more fish than any other country in the world?
   (A) Japan   (B) Great Britain
   (C) France   (D) China

45. When the strike of the fault is parallel to the strike of the rock-beds, the fault is called
   (A) Strike fault   (B) Strike-slip fault
   (C) Dip-slip fault   (D) Diagonal fault

46. When the tensile stress at grain boundary exceeds the local tensile strength of material failure occurs, stated by
   (A) Mohr's theory of failure   (B) Coulomb's theory of failure
   (C) Griffith's theory of failure   (D) None of the above

47. Which of the following feature indicate faulting?
   (A) Slicken sides   (B) Grooves   (C) Breccia   (D) All the above

48. Conjugate joints are often considered as:
   (A) Tension fractures
   (B) Shear fractures
   (C) Compression fractures
   (D) Both tension and compression fractures

49. 'Plumose marking' associated with:
   (A) Folds   (B) Faults
   (C) Joints   (D) Anticline fold

50. A relatively raised block due to relative uplift along the normal faults is:
   (A) Horst   (B) Graben
   (C) Trough   (D) Dome

51. Main Boundary fault extends from Punjab to Assam throughout the extension of the outer Himalayas is a:
    (A) Normal fault   (B) Step fault
    (C) Reverse fault   (D) Parallel fault

52. Extension joints are:
    (A) Joints perpendicular to the axes of folds.
    (B) Joints parallel to the axes of folds.
    (C) Joints associated with faulting.
    (D) Joints associated with inclined bedding planes.

53. Columnar joints are:
    (A) Compressional joints
    (B) Tensile joints
    (C) Shear joints
    (D) Both compressional and Tensional joints

54. In which type of unconformity, the older rocks are of plutonic origin?
    (A) Angular unconformity   (B) Disconformity
    (C) Non conformity   (D) Local unconformity

55. 'Klippe' is a:
    (A) Nappe outlier   (B) Nappe inlier
    (C) Window   (D) Hogback

56. Mark the correct statement:
    (A) An increase in lithostatic pressure caused a increase in the volume of rocks and an increase in the density
    (B) An increase in lithostatic pressure causes decrease in the volume of rocks but an increase in the density
    (C) An increase in lithostatic pressure causes a decrease in the volume of rocks but an increase in the density
    (D) An increase in lithostatic pressure causes no effect on the volume of rocks and in the density

57. Factors which increase the ductility of a rock are:
    (A) Temperature and pressure.
    (B) Rate of application of stress and temperature.
    (C) Temperature and amount of intergranular fluids present in the rock.
    (D) Pressure, rate of application of stress, temperature and amount of intergranular fluids present in the rock.

58. Width of outcrop of a bed on the ground depends upon:
   (A) Thickness of the bed
   (B) Dip of the bed
   (C) Slope of the ground
   (D) All the three above

59. Drag folds:
   (A) Occur within the competent beds.
   (B) Within the competent beds.
   (C) Within the incompetent beds are overlain by competent beds.
   (D) When vertical stresses act on horizontal beds.

60. A recumbent syncline fold may be determined by observing
   (A) Its concave upwards
   (B) Its limbs dip towards the axial plane
   (C) Younger beds in the centre of the fold
   (D) Cannot be determined

61. When the axis plunges directly down the dip of the axial plane; the fold is known as:
   (A) Plunging fold
   (B) Periclinal fold
   (C) Reclined fold
   (D) Flexure fold

62. Ptygmatic folding is a type of:
   (A) Flexure folding
   (B) Shear-folding
   (C) Flow-folding
   (D) None of these

63. Salt domes are the best examples of:
   (A) Diapiric fold
   (B) Reclined fold
   (C) Drag fold
   (D) Pericline fold

64. A Fold in which the anticlines become sharper and synclines become broader with depth is known as:
   (A) Parallel fold
   (B) Similar fold
   (C) Recumbent fold
   (D) Box fold

65. The plunge and pitch are equal when the beds are:
   (A) horizontal
   (B) inclined
   (C) inclined at 45°
   (D) vertical

66. During metamorphism, what happens to the size of crystals?
   (A) They get smaller
   (B) They get larger
   (C) No change in the size
   (D) It is uncontained

67. A massive metamorphic rock indicates:
   (A) Directional pressure
   (B) Overburden pressure
   (C) Tectonic pressure
   (D) None of these

68. Rock deformation is:
   (A) Brittle
   (B) Ductile
   (C) Both brittle and ductile
   (D) Not known

69. Orogeny or tectonic process that includes:
   (A) Folding and faulting
   (B) Intrusion
   (C) Metamorphism
   (D) All the above

70. According to "rule of V's", the outcrop of a horizontal bed forms a 'V' as it crosses a valley and that the apex of the V points:
   (A) upstream
   (B) downstream
   (C) diagonal
   (D) in any direction

71. Altitude of a bed can be measured by:
   (A) Reading the position of the magnetic needle on the outer circle
   (B) Reading the angle by clinometer
   (C) Ending strike direction by compass and dip by clinometer
   (D) Finding strike and dip direction by compass and angle or dip by clinometer

72. The apparent dip of any bed towards any direction is:
   (A) greater than true dip
   (B) equal to the true dip
   (C) less than the true dip
   (D) above conditions depend upon the amount of dip

73. Younger beds will always be found in the:
   (A) Opposite direction of dip
   (B) Direction of dip
   (C) Direction of strike line
   (D) Inclined direction of dip and strike

74. It the limbs of a fold are unequal and inclined to the axial plane or of unequal length the told is known as:
   (A) asymmetrical
   (B) monocline or monoclinical
   (C) recumbent
   (D) inclined

75. The substitution of one ion for another in the atomic structure of a mineral, without a change in structure is known as.
   (A) Deuteric alteration
   (B) Diadochy
   (C) Diagenesis
   (D) Paragenesis

76. Metamorphic rock derived from gravel rocks are known as
   (A) Psephitic ricks
   (B) Psammitic rocks
   (C) Pelitic rocks
   (D) Relict rock

77. A rock composed of ore mineral and silicates formed by contact metamorphism of carbonate rocks, is called:
   (A) Gondite
   (B) Tactile
   (C) Skarri
   (D) Chormockite

78. Granulite is a:
   (A) Low grade metamorphic rock
   (B) Medium grade metamorphic rock
   (C) High grade metamorphic rock
   (D) None of these

79. The amphibolites fogies include the:
   (A) Chlorite and garnet zones
   (B) Staurolite zone
   (C) Staurolite and Kyanite zones
   (D) Staurolite, Kyanite and Sillimanite zones

80. The agents of metamorphism are:
   (A) Pressure and temperature
   (B) Temperature and chemical fluids
   (C) Pressure and chemical fluids
   (D) Temperature, pressure and chemical fluids

81. A train running at a speed of 45 km/hr takes 10 seconds to pass a certain point. Then the length of the train is
   (A) 120 m
   (B) 125 m
   (C) 128 m
   (D) 450 m

82. A circle has
   (A) 10 sides
   (B) 20 sides
   (C) 300 sides
   (D) Infinite sides

83. A sum of money lent by Han at simple interest becomes double of itself in 8 years. Then the sum wills triple itself in
   (A) 16 years
   (B) 15 years
   (C) 20 years
   (D) 24 years

84. An Elmira is sold for Rs 1,800 cash or Rs. 600 cash down payment followed by two monthly instalments of Rs. 610 each. The rate of interest charged under the instalment scheme is

(A) 14% p.a. (B) 13.41% p.a. (C) 15% p.a. (D) 16.72% p.a.

85. x, y, z are three sums of money such that y is the simple interest on x and z is the simple interest on y for the same time and rate. Then the relation between x, y and z is

(A) $y^2 = zx$ (B) xyz (C) xyz = 1 (D) none of these

86. If the compound interest for 2 years on a certain sum is Rs. 63 and the simple interest for 3 years on the same sum at same rate be Rs. 90, then the sum will be

(A) Rs. 300 (B) Rs. 315 (C) Rs. 325 (D) Rs. 350

87. Rs. 2,000 amount to Rs. 2,226.05 in two years at compound interest. The rate of interest is

(A) 5.5% (B) 5% (C) 4.5% (D) 4%

88. A sum of Rs. 550 was taken as a loan. This is to be paid back in two equal instalments. If the rate of interest be 20% compounded annually, then the amount of each installment will be

(A) Rs. 360 (B) Rs. 350 (C) Rs. 340 (D) Rs. 300

89. If after 24% wastage the net output of a coal mine is 68,400 quintals, then the total output is

(A) 80,000 quintals (B) 89,000 quintals
(C) 90,000 quintals (D) 9,000 quintals

90. The sum of two numbers is 100 and their difference is 50. Then the ratio of the two numbers is

(A) 2:1 (B) 3:1 (C) 5:1 (D) 4:1

91. If the sum of 1/3 and 1/4 is x times the difference of 1/3 and 1/4 then the value of x is equal to

(A) 4 (B) 5 (C) 6 (D) 7

92. Angular momentum is
(A) Scalar (B) A polar vector
(C) Linear momentum (D) Axial vector

93. One light year is equal to
(A) 9.46×10^{10} km (B) 9.46×10^{12} km
(C) 9.46×10^{10} m (D) 9.46×10^{12} km

94. A body starting from rest and moving with a constant acceleration covers a distance s_1 in the 4th second and a distance s_2 in the 6th second the ratio s_1/s_2 is

   (A) 2/3   (B) 4/9   (C) 6/11   (D) 7/11

95. A coil of metal wire is kept stationary in non uniform magnetic field

   (A) A emf and both current are both induce din the coil

   (B) A current but emf is induced in the coil

   (C) Only emf and no current is induced in the coil

   (D) Neither emf nor current is induced in the coil

96. If a potential difference of 20,000 V is applied across and an X-ray tube, the cut off wavelength will be

   (A) 6.21×10^{-10} m   (B) 6.21×10^{-11} m

   (C) 6.21×10^{-12} m   (D) 3.1×10^{-11} m

97. Two coils A and B are linked such that the emf E is inducd in B when the current in A is changing at rate I. If I current is now made to flow in B, the flux linked with A will be

   (A) $(Ei)/I$ (B) EiI

   (C) $E/(iI_0)$ (D) $(iI_0)/E$

98. A long straight conductor, carrying a current lies along the x-axis of a ring. The conductor will exert a force on the ring if the ring

   (A) carries a current

   (B) has a uniformly distributed charge

   (C) has non-uniformly charge

   (D) none of the above

99. A solid ball of metal has concentric spherical cavity within it. If the ball is heated, the volume of the cavity will

   (A) increase   (B) decrease

   (C) remain unaffected   (D) none of these

100. 1 meter is equal to

   (A) 10^{10} Å   (B) 10^8 Å   (C) 10^6 Å   (D) 10^7 Å