Section 1 - General Awareness

1) Which of the following is the capital of Yemen?

A) Kampala
B) Lusaka
C) Lome
D) Sanaa

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2) Who among the following discovered that some molecules have mirror images and these can be described as left-handed and right-handed versions of a chemical compound?

A) Chester W. Rice
B) Frederick Walton
C) Charles H. Townes
D) Louis Pasteur

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3) Krishna Sobti won which of the following awards in 2017?

A) Indira Gandhi Peace Prize
B) Rajiv Gandhi Peace Prize
C) Shantiswarup Bhatnagar Award
D) Jnanpith Award

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4) Who among the following individuals is NOT associated with invention, related to automobiles?

A) Karl Benz
B) Gottlieb Daimler
C) Joseph E. Glidden
D) Emile Levassor

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5) Minsk is the capital city of which of the following countries?

A) Belarus
B) Rwanda
C) Lebanon
D) Norway

6) In April 2018, which of the following Arab countries opened its first public movie theatre, after over 35 years of prohibition for religious reasons?

A) Bahrain
B) Saudi Arabia
C) Oman
D) United Arab Emirates

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7) Which of the following was the major emphasis in the First Five Year Plan of India?

A) Introduction of Family Planning Programmes
B) Construction of roads, irrigation and water electricity projects
C) Removal of Poverty
D) Expansion in Employment opportunities

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8) Which of the following books is penned by renowned author Jhumpa Lahiri?

A) The One You Cannot Have
B) In Other Words
C) Why We Love The Way We Do
D) A Hundred Little Flames

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9) In February 2018, the train Palace Queen Humsafar Express was flagged off by Prime Minister Narendra Modi in which of the following states?

A) Andhra Pradesh
B) Tamil Nadu
C) Uttarakhand
D) Karnataka

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10) Which of the following teams won the 'Team of the Year Award' at Laureus Awards 2017?

A) New England Patriots (American Football)
B) Mercedes-AMG Petronas F1 Team (Grand Prix)
C) Real Madrid (Football)
D) Golden state Warriors (Basket Ball)

11) Who among the following has been honoured with the Scientific and Engineering Academy Award at Oscars Scientific and Technical Awards 2018 for his contribution towards the implementation of the 'Shotover K1 Camera System'?

A) Purnam Sharma
B) Vikas Sathaye
C) Roger Deakins
D) Swatu Singh

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12) Which of the following is the capital city of Brunei?

A) Santo Domingo
B) Andorra la Vella
C) Bandar Seri Begawan
D) Poto Novo

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13) Who among the following drafted the 'Sarvodaya Plan' in 1950 for the development of India?

A) M.N. Roy
B) J.R.D. Tata
C) Jaiprakash Narayan
D) Mahatma Gandhi

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14) Which of the following Five Year Plans was postponed by two years because of the political uncertainty at the centre?

A) Second Five Year Plan
B) Ninth Five Year Plan
C) Eighth Five Year Plan
D) Third Five Year Plan

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15) Name a scientist who found or discovered that electric potential in a capacitor is directly proportional to its electric charge?

A) Alessandro Volta
B) Antonie van Leeuwenhoek
C) Henri Giffard
D) Andreas Vesalius

Section 2 - Analytical Ability

16) Mr. Khanna started rearing ducks. His ducks are producing 960 eggs per day and each egg is sold at Rs.5. What is his earnings per week by selling the eggs?

A) Rs. 67200
B) Rs. 87200
C) Rs. 33600
D) Rs. 27200

17) If the marked price of an item is Rs. 4000 & its selling price is Rs. 3500, then the % of discount given is

A) 0.114
B) 0.125
C) 0.109
D) 0.0911

18) Ajay & Vinod are shaking hands with each other in the morning. Ajay's shadow falls to the left of Vijay. Which direction is Vinod facing?

A) South East
B) North
C) North West
D) West

19) The difference between simple interest & compound interest on a certain sum of money at 20% per annum for 2 years is Rs. 1000. The principal amount is

A) Rs. 63000
B) Rs. 25000
C) Rs. 60000
D) Rs. 50000

20) What is the next number in the given series? 20, 22, 48, 150, ?

A) 612
B) 614
C) 610
D) 608

21) Looking at a poster of a lady , Sandhya said, “Her husband is the only son-in-law of my father at present.” How is Sandhya related to that lady?

A) Grandmother
B) Niece
C) Mother
D) Sister

22) A train covers a distance of 300 km in 4 hours. If it's speed is increased by 33.33%, then to cover the same distance the train will take

A) 2 hours
B) 5 hours
C) 3 hours
D) 4 hours

23) What is the next number in the given series? 25, 64, 121, 196, ?

A) 256
B) 225
C) 324
D) 289

24) Nitin walks a distance of 2 m towards North, then turns to his right and walks 3 m. He again turns right and walks for 8 m. After that,he turns to his right and walks for 8 m. He then walk on a circular path of radius 7 m only once.Total distance covered by him is

A) 55 m
B) 65 m
C) 60 m
D) 50 m

25) A metro department operates 400 trains. 12% of these trains cover the North zone. The total number of trains that cover other zones excluding North zone is

A) 435
B) 352
C) 410
D) 364

26) A cyclist rides down a hill at the rate of 12 kmph and rides up the hill at a rate of 8 kmph. He covers equal distances in both the instances and takes 10 hours overall. The distance ascended is

A) 40 km
B) 90 km
C) 48 km
D) 96 km

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27) If ROME is coded as 16, EARTH is coded as 25, then KINGDOM will be coded as

A) 31
B) 49
C) 29
D) 48

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28) Two cars start at the same time from two points P & Q and move towards each other at the speed of 60 kmph and 70 kmph respectively. When they meet, one car has travelled 120 km more than the other.The distance between P & Q is

A) 1860 km
B) 1560 km
C) 1160 km
D) 1060 km

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29) In each of the following questions,there is a certain relationship between two given words on one side of : : and one word is given on another side of : :while another word is to be found from the given alternatives,having the same relation with this word as the words of the given pair bear. Choose the correct alternative.
Star : Galaxy :: Sheep : ?

A) goat
B) flock
C) fleet
D) clash

30) Rs. 10,000 is lent at 10% per annum compound interest for “n” years. At the end of “n” years, it becomes Rs. 14,641. If the amount is compounded annually, then the value of “n’ is

A) 11
B) 4
C) 3
D) 8

Section 3 - Assistant Geology

31) The resistivity of a material is defined in terms of the magnitude of the electric field across it that gives a certain current density. Unit of resistivity is

A) Ohm/metre
B) Ohm
C) Ohm-metre
D) Ohm/metre^2

32) In vertical aerial photos, the ratio between the focal length of the camera and the flying height of the aircraft above the terrain is expressed as:

A) Tone
B) Structure
C) Scale
D) Shape

33) In geologic exploration, tunnel lining is resorted to when

(i) internal water pressures are high
(ii) the rock is anisotropic
(iii) the desired hydraulic resistance is high

A) (i), (ii) and (iii)
B) (ii) and (iii)
C) (i) and (iii)
D) (i) and (ii)

34) Many internal and external factors operate in causing landslides. Internal factors responsible for landslides is/are:
(i) Nature of slope
(ii) Composition of the mass
(iii) Water content

A) (ii) only
B) (iii) only
C) (i) only
D) (i), (ii) and (iii)

35) In which of the following scenarios primary foliation is formed?

A) Primary foliation forms after the flowage of a fully crystallized magma
B) Primary foliation forms during the flowage of a partially crystallized magma
C) Primary foliation forms after the flowage of a partially crystallized magma
D) Primary foliation forms before the flowage of a fully crystallized magma

36) A sandstone derived from disintegration of granite or gneiss, and characterized by high feldspar content:

A) Quartz
B) Lithic
C) Litharenite
D) Arkose

37) In which of the following, the axial plane is inclined and the limbs dip unequally in opposite directions?

A) Asymmetrical folds
B) Monoclinal folds
C) Upright folds
D) Recumbent folds

38) Depression in a glacial outwash drift made by the melting of a detached mass of glacial ice that became wholly or partly buried is known as

A) Kettle holes
B) Kames
C) Eskers
D) Drumlins

39) The maximum shear stresses occur on planes at what angle to the principal planes?

A) 30°
B) 45°
C) 60°
D) 75°

40) Ammonites are fossils of coiled mollusks that became extinct at the end of

A) Palaeozoic era
B) Tertiary era
C) Mesozoic era
D) Quaternary era

41) The type of fold which shows parallel limbs, which may be either vertical or horizontal, with both limbs dipping at equal angles in same direction is called

A) Recumbent fold
B) Monoclinal fold
C) Isoclinal fold
D) Fan fold

42) The hydraulic head in a groundwater system (an aquifer) is measured as the height above a reference level. The Hydraulic head is

A) product of, top of casing and depth to water
B) rati of, top of casing and depth to water
C) sum of, top of casing and depth to water
D) difference of, top of casing and depth to water

43) A Geophone is used in which method of prospecting?

A) Seismic
B) Geochemical
C) Self potential
D) Resistivity

44) Along with seams of coal, the rocks of Karharbari group consist almost solely of

(i) sandstones
(ii) grits
(iii) conglomerates

A) (ii) only
B) (iii) only
C) (i) only
D) (i), (ii) and (iii)

45) *Physa* have long been handy models for studying the genetics and development of left-right asymmetry. It is an entirely

A) Sinistral species
B) Dextral species
C) Discoidal species
D) Convolute species

46) The Spiti Valley, located north of the Pir Panjal Range, exposes an excellent section of which types of rocks in the Tethyan Himalaya of Himachal Pradesh?

A) Cambrian rocks
B) Neoproterozoic-Cretaceous rocks
C) Silurian rocks
D) Carboniferous rocks

47) Which of the following is a colour changing phenomenon, involving oxidation?

A) Allochromatic
B) Idiochromatic
C) Tarnish
D) Iridescence

48) In terms of storage of water, the largest reservoir in India is

A) Indira Sagar Dam
B) Sardar Sarovar Dam
C) Nagarjuna Sagar Dam
D) Bhakra Dam

49) The Silicon : Oxygen ratio of Sorosilicate structure is:

A) 4:11
B) 2:7
C) 4:10
D) 1:4

50) The process whereby rockmasses are incorporated by magmas and which is an important factor in bringing about diversity in igneous rocks is:

A) Fractional Crystallization
B) Differentiation
C) Assimilation
D) Bowen Reaction Series

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51) Which of the following is caused by erosion by wind-borne sand (corrasion), and often lie parallel to the direction of the prevailing wind?

A) White-out
B) Zenith
C) Whirlpool
D) Yardangs

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52) Which of the following options is INCORRECT with context to properties of stones, that are used in engineering constructions?

A) Stones must look good in appearance and be of uniform colour
B) Stones should have higher percentage of pores
C) Building stones should have high weight to resist higher compressive forces
D) A good building stone should have a low wearing resistance

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53) A downward movement of soil along no definite surface of failure, where the mass is loosely packed by natural disintegration and decay, and the movement is highly irregular is known as

A) Slump
B) Subsidence
C) Flowage
D) Sliding

54) Which of the following options is CORRECT with context to statements given below?

(i) Equipotential lines are always perpendicular to the electric field
(ii) Movement along an equipotential surface requires no work
(iii) For parallel conducting plates like those in a capacitor, the equipotential lines are perpendicular to the plates

A) (i) and (iii)
B) (i), (ii) and (iii)
C) (i) and (ii)
D) (ii) and (iii)

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55) Which of the following instruments is used to measure the rate of evaporation?

A) Altimeter
B) Atmometer
C) Actinometer
D) Aspirator

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56) When a well is pumped for an extended period of time, an imaginary (or virtual) cone of depression forms in the piezometric surface of a

A) idealized aquifer
B) confined aquifer
C) unconfined aquifer
D) leaky aquifer

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57) The stone to be used as railway ballast should be hard, tough nonporous and should not decompose when exposed to air and light. Which of the following forms an excellent ballast material?

A) Sandstone
B) Shale
C) Granite
D) Limestone

58) What is a structure built to support the lateral pressure of an arch or span at the ends of a bridge called as?

A) Abutment
B) Span
C) Parapet
D) Deck

59) mineral formed during the crystallization of a magma due to failure of an earlier phase to react with the liquid portion of the magma is known as.

A) Felsic mineral
B) Secondary mineral
C) Released mineral
D) Mafic mineral

60) Beginning with a shale parent, in what sequence metamorphic rocks are produced by Barrovian metamorphism?

A) Shale, phyllite, slate, schist
B) Shale, slate, phyllite, schist
C) Shale, phyllite, schist, slate
D) Shale, schist, slate, phyllite

61) Which of the following is a device that measures the elevation of land?

A) Machmeter
B) Bathometer
C) Otoscope
D) Hypsometer

62) Chert, chalcedony, jasper, and flint are interchangeable terms for very hard, very fine-grained microcrystalline silica. This material is extremely dense and breaks with a

A) Splintery fracture
B) Even fracture
C) Conchoidal fracture
D) Hackly fracture

63) Adamantine minerals possess a superlative lustre. The type of lustre shown by Adamantine is of

A) metal
B) resin
C) silk
D) diamond

64) The gentle slope on the inside of a meander bend opposite the undercut slope that occurs on the outside of a meander bend owing to erosion is called:

A) Slip-off slope
B) Slate
C) Sleet
D) Escarpment

65) In an intergrowth that frequently produces "graphic texture", skeletons of which crystals are embedded in the orthoclase?

A) Biotite
B) Hornblende
C) Quartz
D) Olivine

66) The Vindhyan system of rocks stand over the Cuddapah rocks and cover large areas in

(i) Uttar Pradesh
(ii) Chhattisgarh
(iii) Madhya Pradesh
(iv) Rajasthan

A) (i), (ii) and (iii) only
B) (i), (iii) and (iv) only
C) (i), (ii), (iii) and (iv)
D) (ii), (iii) and (iv) only

67) If a fault plane is inclined with an angle of 35°, then the hade angle will be:

A) 145°
B) 55°
C) 125°
D) 45°

68) Which of the following is NOT a feature of Syncline?

A) In synclines, the youngest rocks occupy the interior positions of the fold
B) Synclines are convex downwards
C) Limbs of syncline dip toward each other
D) In synclines, the rocks show upward arching

69) *Terebratula* belongs to the phylum:

A) Brachiopoda
B) Mollusca
C) Coelenterate
D) Echinodermata

70) Pseudomorphism is the existence of a mineral that has the appearance of another mineral. It occurs when a mineral is altered in such a way that its

A) internal structure is changed but chemical composition and external form are preserved
B) internal structure, chemical composition and external form, are changed
C) internal structure and chemical composition are changed but its external form is preserved
D) internal structure, chemical composition and external form, are preserved

71) Gneissose structure is formed due to which metamorphism?

A) Thermal
B) Plutonic
C) Dynamothermal
D) Cataclastic

72) Ripple marks are characteristic of shallow water deposition and can also be caused by wind blowing over the surface. They are sedimentary structures shown by

A) Basalt
B) Marble
C) Sandstone
D) Gabbro

73) A type of fault whose relative motion is predominantly horizontal in either sinistral or dextral direction is called

A) Transform fault
B) Normal fault
C) Strike fault
D) Dip fault

74) In which of the following arrays, four electrodes are placed in line and spaced equidistant from each other, where two outer electrodes are current electrodes, and two inner electrodes are potential electrodes?

A) Schlumberger array
B) Wenner array
C) Pole-pole array
D) Pole-dipole array

75) A structure formed by extension, where a rigid tabular body is stretched and deformed amidst less competent surroundings is known as

A) Décollement
B) Ptygmatic fold
C) Pinch and Swell
D) Boudinage

76) The type of metamorphism in which directed pressure and heat play a dominant role is called

A) Platonic Metamorphism
B) Geothermal Metamorphism
C) Metasomatic Metamorphism
D) Dynamothermal Metamorphism

77) The angle at which the fault plane meets a vertical plane is known as

A) Foot wall
B) Fault dip
C) Fault strike
D) Fault scrap

78) If beds that are horizontal, suddenly dip at a high angle, then the feature they form is termed as a

A) Garnet
B) Trough
C) Syncline
D) Monocline

79) The alteration in rocks due to the combined effects of heat and magmatic emanations largely consisting of the halogen elements, water and compounds of boron, phosphorus, and the alkali metals is known as

A) Pneumatolytic metamorphism
B) Plutonic metamorphism
C) Optalic metamorphism
D) Pyrometamorphism

80) A texture of porphyritic igneous rocks made by interpenetration of phenocrysts and ground mass is known as

A) Pilotaxitic
B) Ocellar
C) Granophyric
D) Hyaloclastic

81) A structure, generally anticlinal or dome like in shape, that is formed by forcible thrusting or piercing of overlying rocks by an intrusive body from below is called

A) Pinch and Swell
B) Ptygmatic fold
C) Diapir
D) Boudin

82) The deposits which occupy nearly half of the area of present day Kashmir and presently range from altitudes of Jhelum to the slopes of Pir Panjal are known as:

A) Jamgaon deposits
B) Shivalik deposits
C) Nawargaon deposit
D) Karewa deposits

83) The top surface of the zone of saturation or groundwater is known as :

A) Phreatic surface
B) Capillary surface
C) Aeration zone
D) Vadose zone

84) A water table map shows the spatial distribution of water levels in wells in an unconfined aquifer, and is a type of

A) Potentiometric surface map
B) Isocontour map
C) Hydraulic map
D) Isopach map

85) The axial portion of the cephalon called the glabella is largely occupied by the anterior digestive system, and is present in the

A) Thorax
B) Pygidium
C) Head shield
D) Tail section

86) Ore prospecting is an application of which of the following types of electrical resistivity methods?

(i) Profiling
(ii) Sounding
(iii) Potential Method

A) (i) and (ii) only
B) (i), (ii) and (iii)
C) (i) and (iii) only
D) (ii) and (iii) only

87) Which of the following options with context to the selection of type of dams is INCORRECT?

A) If constructing a dam at a certain location entails quarrying up large areas of beautiful greenery, for example, then another alternative may have to be thought of or a suitable remedial measure chalked up
B) With available dynamic structural analysis computer program for dams using techniques like the Finite Element Method, is possible to analyse the behaviour of the dam under earth quake vibrations
C) If, during the construction season, there are possibilities of the partially constructed dam being overtopped by the floods of the river water, then an embankment dam section would be preferred over a concrete dam section
D) The shape of the river valley and the overburden, that is, the loose bouldery, gravelly, or sandy material overlying the river floor also influences the type of dam that may be proposed to be constructed

88) The volume of water released from storage by an unconfined aquifer per unit surface area of aquifer per unit decline of the water table is known as

A) Hydraulic Resistivity
B) Specific Yield
C) Hydraulic Conductivity
D) Specific Retention

89) A well consisting of a large diameter cement concrete caisson, sealed at the bottom, with radiating perforated casings driven into position by hydraulic jacks is called:

A) Ranney collector well
B) Bore well
C) Tube well
D) Cavity well

90) The zone below the groundwater table is known as

A) Surface zone
B) Oxidation zone
C) Saturated zone
D) Unsaturated zone

91) The downward movement of wet soil along the slopes under the influence of gravity is known as

A) Creep
B) Subsidence
C) Landslides
D) Solifluction

92) The rocks act as a natural arch when the tunnel axis is

A) normal to dip direction
B) parallel to dip direction
C) parallel to strike direction
D) inclined to dip direction

93) The steepest angle at which a pile of unconsolidated grains remains stable, and is controlled by the frictional contact between the grains is called

A) Shear angle
B) Angle of failure
C) Sub-angle
D) Angle of repose

94) Faults are line of fractures on the rock along which the opposite blocks move past each other. The vertical displacement of the block is known as

A) Heave
B) Head
C) Dip
D) Throw

95) Which of the following contains one of the world's richest collection of mammalian fossils?

A) Spiti Valley
B) The Nilgiri Mountains
C) Shivalik hills
D) The Great Rann of Kutch

96) Magnesium iron silicate is the chemical name of which of the following?

A) Olivine
B) Feldspar
C) Muscovite
D) Quartz

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97) Remote sensing techniques uses the properties of which of the following waves, that are emitted, reflected or diffracted by the sensed objects?

A) Electromagnetic waves
B) Wind waves
C) Sound waves
D) Surface waves

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98) A structure has to withstand greater risk during earthquakes, if it is built on

A) Strong rocks
B) Solid mass
C) Unfractured mass
D) Loose soil

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99) The dip in any direction other than the true dip is called an apparent dip. An apparent dip is always

(i) larger than the true dip
(ii) equal to the true dip
(iii) smaller than the true dip

A) (i) and (ii)
B) (i) only
C) (ii) only
D) (iii) only

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100) In Argillaceous rocks, clay or alumina is the main constituent. Which of the following is an example of argillaceous rock?

A) Limestone
B) Sandstone
C) Marble
D) Slate

Answer Keys

1	D	26	C	51	D	76	D
2	D	27	B	52	B	77	B
3	D	28	B	53	C	78	D
4	C	29	B	54	C	79	A
5	A	30	B	55	B	80	C
6	B	31	C	56	B	81	C
7	B	32	C	57	C	82	D
8	B	33	D	58	A	83	A
9	D	34	D	59	C	84	A
10	B	35	B	60	B	85	C
11	B	36	D	61	D	86	B
12	C	37	A	62	C	87	C
13	C	38	A	63	D	88	B
14	C	39	B	64	A	89	A
15	A	40	C	65	C	90	C
16	C	41	C	66	C	91	D
17	B	42	D	67	B	92	B
18	B	43	A	68	D	93	D
19	B	44	D	69	A	94	D
20	D	45	A	70	C	95	C
21	D	46	B	71	C	96	A
22	C	47	C	72	C	97	A
23	D	48	A	73	A	98	D
24	B	49	B	74	B	99	D
25	B	50	C	75	D	100	D