

Section 1 - General Awareness

1) Moscow is the capital of which of the following countries?

- A) Russia
  - B) Sweden
  - C) Denmark
  - D) Norway
- 

2) Which of the following is an INCORRECT option regarding the capital cities located in Europe?

- A) Amsterdam
  - B) Ljubljana
  - C) Jakarta
  - D) Vaduz
- 

3) Which of the following is CORRECT with regards to Zealandia?

- A) It is a renamed continent which constitutes Australia and New Zealand along with 15 other tiny nations
  - B) It is a nearly submerged mass of land (Continent) in the South Pacific Ocean in the 2017 expedition.
  - C) It is a joint search mission by Australia and Malaysia to find the remains of the disappeared plane, MH-370
  - D) Research of alien structures discovered on Antarctica in 2017
- 

4) Under the Popular Choice Honours, 'Breakthrough performance of the year' award was given to which of the following players at the inaugural edition of Indian Sports Honours 2017?

- A) Sunil Chettri
  - B) Yogeshwar Dutta
  - C) Hardik Pandya
  - D) Sumit Nagal
- 

5) How is Kenneth Juster connected with India?

- A) New Zealand Ambassador to India
- B) CEO of Google India
- C) A member of NITI Aayog
- D) US Ambassador to India

6) A National Health Protection Scheme launched in budget speech of 2018-19 by Finance Minister will target how many number of families in the country?

- A) 1 crore poor and vulnerable families
  - B) 10 crore poor and vulnerable families
  - C) 5 million middle class families
  - D) 20 million poor families
- 

7) According to the budget speech of 2018-19, technology will also be used to upgrade the skills of teachers through which of the following digital portal?

- A) Guru-Diksha
  - B) Digi-Prashikshan
  - C) DIKSHA
  - D) TECH-SHIKSHA
- 

8) Who among the following is the author of the book 'It Happens for a Reason'?

- A) Anita Desai
  - B) Jhumpa Lahiri
  - C) Preeti Shenoy
  - D) Sudha Murthy
- 

9) Who among the following is called as 'The Father of Neuroscience'?

- A) Santiago Ramon y Cajal
  - B) Montgolfier Brothers
  - C) Julius Robert Oppenheimer
  - D) Felix Hoffman
- 

10) Name the researcher who was a recipient of the first Nobel Prize for Physics in 1901 for the discovery of X-rays?

- A) Stanley Cohen
- B) Jan Ingenhousz
- C) Lazzaro Spallanzani
- D) Wilhelm Conrad Rontgen

11) Who among the following is best known for making the first accurate measurement of the circumference of the earth?

- A) Christoph Scheiner
  - B) Eratosthenes
  - C) Aristarchus of Samos
  - D) Seleucus of Seleucia
- 

12) Which of the following is awarded to the scientists with outstanding work in the field of astrophysics, nanoscience and neuroscience?

- A) Japan Prize
  - B) Kavli Prize
  - C) Kyoto Prize
  - D) Heineken Prize
- 

13) Who among the following was elected as the 13th Chief Minister of Himachal Pradesh in December 2017?

- A) Sarbananda Sonowal
  - B) Prem Kumar Dhumal
  - C) Virbhadra Singh
  - D) Jai Ram Thakur
- 

14) According to the budget statement (2017-2018) by Mr Arun Jaitley, under which of the following schemes, is the Govt. providing free LPG connection to the poor of the country?

- A) Gramin Bhandaran Yojana
  - B) Swasthya Gramin Yojana
  - C) Ujjwala Yojana
  - D) Saubhagya Yojana
- 

15) Kazakhstan is located in which of the following continents?

- A) South America
- B) Africa
- C) Asia
- D) Europe

Section 2 - Analytical Ability

16) What is the next number of the given series?  
4, 5, 16, 17, 64, 65, ?

- A) 256
  - B) 160
  - C) 512
  - D) 130
- 

17) If NIZAM is coded as MHYZL, then LEMON is coded as

- A) KDLNM
  - B) KELNM
  - C) KDLNN
  - D) MDLNM
- 

18) Sonal's mother's father's only son is the husband of Dimple's only sister. Jhanvi is the daughter of Dimple's sister. Sonal's maternal uncle is Jhanvi's

- A) Niece's husband
  - B) Mother's Husband
  - C) Uncle's son
  - D) Uncle's daughter
- 

19) If 1 centimeter = 0.39 inches, then 0.75 inches is equal to

- A) 2.235 cm
  - B) 1.923 cm
  - C) 1.872 cm
  - D) 1.673 cm
- 

20) A biker travels 50 km to South and then turning to West he goes 70 km. Again he turns to his right and goes 50 km. After this he turns to his left and goes 70 km and reaches his destination. How far is he from the starting point?

- A) 25 km
- B) 70 km
- C) 140 km
- D) 50 km

21) Joy travels at a speed of 36 kmph. Distance traveled by him in 3 seconds is

- A) 22 m
  - B) 30 m
  - C) 36 m
  - D) 12 m
- 

22) Two trains of equal lengths take 40 seconds and 1 minutes respectively to cross a standing man. The length of each train is 1200 metres. Time they would take to cross each other travelling in opposite direction is

- A) 68 sec
  - B) 62 sec
  - C) 48 sec
  - D) 55 sec
- 

23) What is the next number of the given series? 79, 81, 83, 85, ?

- A) 89
  - B) 84
  - C) 86
  - D) 87
- 

24) A certain sum of money amounts to Rs.2600 in 1 year under certain rate of simple interest and to Rs. 3000 in 2 years under same rate of simple interest. The principal amount is

- A) Rs. 2300
  - B) Rs. 2200
  - C) Rs. 2400
  - D) Rs. 2500
- 

25) Out of Rs 1700, a part was lent at a simple Interest of 3% and the rest at a simple interest of 6%. If the interest on the part lent at 3% after 2 years is equal to the interest on the part lent at 6% after 4 years, then the amount lent at 6% is

- A) Rs. 170
- B) Rs. 430
- C) Rs. 340
- D) Rs. 180

26) A mobile is bought at Rs. 10000 & sold at Rs. 16000.  
The loss/gain % is

- A) 0.6
  - B) 0.55
  - C) 0.61
  - D) 0.52
- 

27) With zero stoppages, the average speed of the car is 120 kmph and with stoppages, the average speed of the car is 104kmph. The total number of minutes the car stops is

- A) 16 minutes
  - B) 4 minutes
  - C) 12 minutes
  - D) 8 minutes
- 

28) Ramesh, who is facing North, starts walking straight towards a building 100 m away. He then takes a right turn & walks 300 m towards a tower. The direction in which the tower located with reference to Ramesh's initial position is

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

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. Sweater : Wool :: Rope : ?

- A) Velvet
  - B) Water
  - C) Nylon
  - D) Wood
- 

30) Number of ways in which six students can line up in a straight line, if the order matters is

- A) 720 ways
- B) 220 ways
- C) 830 ways
- D) 360 ways

Section 3 - Surveyor Geology

31) Which of the following crystal systems has all the three crystallographic axes equal in size?

- A) Isometric
  - B) Tetragonal
  - C) Orthorhombic
  - D) Triclinic
- 

32) Plagioclase is a mineral that shows twinning in accordance with Albite Twin Law. The composition surfaces in such a case are arranged

- A) parallel to each other with (010) as the twin plane
  - B) perpendicular to each other with (031) as the twin plane
  - C) independent of the lattice structure with (001) as the twin plane
  - D) at the intersection of lattice points with (111) as the twin plane
- 

33) The aquifers in which the water table is exposed to the Earth's atmosphere through the zone of aeration are known as:

- A) Confined aquifers
  - B) Unconfined aquifers
  - C) Aquicludes
  - D) Aquitards
- 

34) The Weiss parameters of a crystal face are  $1a$   $1b$   $1c$ . Which of the following crystal faces is BEST represented by these parameters?

- A) Prism
  - B) Pyramid
  - C) Pedion
  - D) Pinacoid
- 

35) A polished, striated rock surfaces on a fault caused by the frictional movement of fault blocks against each other is known as:

- A) Slickensides
  - B) Plunge
  - C) Buckle
  - D) Pitch
- 

36) An antiformal syncline will be defined by

- A) a convex downward structure with younger rocks at the periphery
  - B) a convex downward structure with older rocks at the centre
  - C) a convex upward structure with older rocks at the centre
  - D) a convex upward structure with younger rocks at the centre
- 

37) A dot grid map is prepared for a flooded area on the basis of a vertical photograph captured on a scale of 1:20000. The flooded area is covered by 130 dots on a 25-dot/cm<sup>2</sup> grid. What will be the ground area flooded?

- A) 2.08 hectares
  - B) 208 hectares
  - C) 28 hectares
  - D) 20.8 hectares
- 

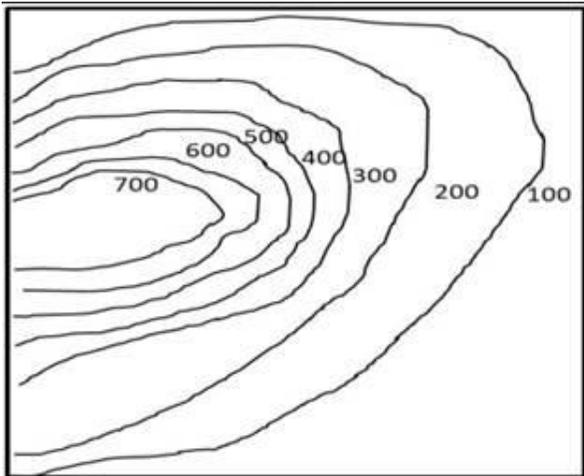
38) Which one of the following theories explains the origin of the earth from Nebular cloud?

- A) Plate Tectonics Theory
  - B) Big Bang Theory
  - C) Kant-Laplace Theory
  - D) Jean-Jeffreys Theory
- 

39) Which of the following faults are vertical (or nearly vertical) fractures where the blocks have mostly moved horizontally and occur as a result of shear stress?

- A) Reverse fault
  - B) Normal fault
  - C) Strike slip fault
  - D) Thrust fault
-

40) Which relief feature is represented by the above contour map?



- A) Hill with steep slope
- B) Valley with gentle slope
- C) Hill with gentle slope
- D) Valley with steep slope

41) The first mineral to form as per the discontinuous series of the Bowen's Reaction Series is

- A) hornblende
- B) forsterite
- C) fayalite
- D) augite

42) In fold geometry, the portion of an anticline which encounters maximum pressure is

- A) limbs
- B) axial plane
- C) bedding plane
- D) hinge

43) The flaser bedding differs from lenticular bedding in

- A) having only silt and finer clastics
- B) having higher proportion of fine clastics than cross-laminated sand
- C) having only planar bedded sands
- D) having higher proportion of cross-laminated sand than finer clastics

44) According to palaeontologists, a naturally preserved remain of ancient life form or its behavioural patterns it termed as a fossil, provided it is ATLEAST

- A) 1 billion years old
- B) 10,000 years old
- C) 100,000 years old
- D) 10 million years old

45) The formation of accretionary prism at the convergent plate margin between a continental and an oceanic plate is the result of

- A) obduction of oceanic plate
- B) slippage of oceanic plate
- C) formation of volcanic islands
- D) breakage of continental plate

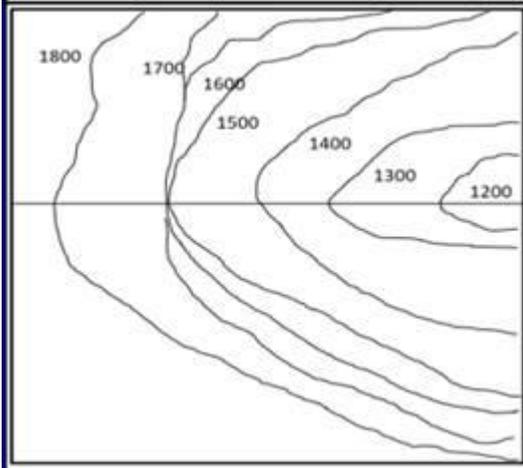
46) The valley factor of a narrow V-shaped valley is 2.5. What should be the permissible length of a concrete arch dam built on this valley, which has a height of 80 metres?

- A) 100 metres
- B) 80 metres
- C) 200 metres
- D) 32 metres

47) The place of origin of an earthquake in the earth's crust is known as:

- A) Focus
- B) Trench
- C) Seismic Vertical
- D) Subduction zone

48) The above map represents a waterfall. The contours are measured in meters. Calculate the height of the waterfall.



- A) less than 200 m but more than 100 m
- B) more than 200 m but less than 300 m
- C) less than 200 m
- D) more than 300 m

49) Garnet is an isotropic mineral, which becomes dark under cross Nicol settings in a petrological microscope. The optical indicatrix for this mineral will be sphere because its

- A) refractive index has lowest along the optic axis
- B) refractive index is same in all the directions
- C) refractive index is highest along the optic axis
- D) refractive index is different values in different directions

50) The parent rock which transforms into marble on getting metamorphosed is:

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

51) Which of the following minerals has a red/brown streak obtained by scratching the mineral on an unpolished piece of white porcelain?

- A) Quartz
- B) Calcite
- C) Hematite
- D) Muscovite

52) The last mineral to precipitate in a comb structure formed in cavities due to the hydrothermal processes is

- A) augite
- B) calcite
- C) sphalerite
- D) quartz

53) The Si:O ratio for a framework silicate is

- A) 5:11
- B) 1:2
- C) 2:7
- D) 1:4

54) Arrange the following minerals in descending order on the Moh's scale of relative hardness and choose the CORRECT option:

- i. Talc
- ii. Corundum
- iii. Topaz
- iv. Quartz
- v. Orthoclase

- A) iv>iii>ii>v>i
- B) ii>iii>iv>v>i
- C) ii>iv>iii>v>i
- D) i>ii>iii>iv>v

55) The Dharwar Craton is marked by progressive metamorphism from the north towards south, with metamorphic isograds running orthogonal to the structural trend. Which of the following metamorphic facies of rocks will represent the southern boundary of the Dharwar Craton?

- A) Amphibolite Facies
- B) Granulite Facies
- C) Greenschist Facies
- D) Hornfels Facies

56) In the olivine solid solution series (forsterite to fayalite), magnesium ions in the octahedral sites are progressively replaced by ferrous ions, this replacement is possible because:

- A) Magnesium being less reactive is easily replaced by ferrous ion
  - B) Both magnesium and ferrous ions have similar charge and radius
  - C) Ferrous ion is smaller in radius than magnesium ion
  - D) Magnesium ion is smaller in radius than ferrous ion
- 

57) Which of the following statements is TRUE for a sedimentary rock to be formed of texturally immature sediments?

- A) Rounded grains consisting of quartz as dominant mineral
  - B) Well sorted grains consisting of orthoclase
  - C) Mediumly rounded grains consisting of abundant feldspar
  - D) Angular grains comprising of olivine crystals and volcanic glass
- 

58) A geographic coordinate that specifies the north-south position of a point on the earth's surface is known as:

- A) Latitude
  - B) Scale
  - C) Longitude
  - D) Projection
- 

59) Which of the following brachiopods shows hemiperipheral shell growth?

- A) *Productus*
  - B) *Spirifer*
  - C) *Rafinesquina*
  - D) *Lingula*
- 

60) The science of drawing maps is called:

- A) Cartography
- B) Cryptology
- C) Contour drawing
- D) Calligraphy

61) What will be the representative fraction when the scale is 1 cm to 50 m?

- A) 1:50,000
  - B) 1:5000
  - C) 1:50
  - D) 1:500
- 

62) Consider the following univariant metamorphic reaction in a simple  $\text{Al}_2\text{SiO}_5$  system with excess  $\text{SiO}_2$  and  $\text{H}_2\text{O}$  in a regional metamorphic setting:



(Andalusite) (Silica) (Water) (Pyrophyllite)

In this case, if the  $\text{Al}_2\text{SiO}_5$  was kyanite then the rock was metamorphosed

- A) at a pressure more than 2.5 kbar
  - B) at a pressure equal to 1 kbar
  - C) at a pressure less than 1 kbar
  - D) at a pressure less than 2.5 kbar
- 

63) If a rock samples of cross-section 4 sq. inch breaks under a load of 40,000 pounds, what will be the compressive strength of the rock?

- A) 1,600 psi
  - B) 10,000 psi
  - C) 0.01 psi
  - D) 160,000 psi
- 

64) An antidune is a bedform found in fluvial environments and is characteristic of upper flow regime with Froude Number greater than 1. Which of the following statements is TRUE in this regard?

- A) The amplitude of antidune bedforms decreases rapidly during its migration upstream
- B) The antidunes that migrate downstream counter the direction of the flow
- C) The antidune bedforms are generally asymmetrical unlike symmetrical ripples in lower flow regimes
- D) The sediments in antidune will be deposited on the stoss side and eroded from the lee side

65) In the supergene sulphide enrichment setting, the copper oxide minerals like malachite and cuprite are found above the water table while copper sulphide minerals like covellite and chalcocite are found below the water table. Which of the following statements gives the best explanation of such a setting?

- A) The water table dissolves oxides and forms sulphides
  - B) The zone above the water table has oxidising conditions while below the water table has reducing conditions
  - C) The zone above the water table has unaltered deposits while below the water table has reducing conditions
  - D) The zone above the water table has reducing conditions while below the water table has oxidising conditions
- 

66) The non-plunging folds are formed when the axis is

- A) parallel to the earth's surface
  - B) inclined to the earth's surface
  - C) coinciding with the earth's surface
  - D) perpendicular to the earth's surface
- 

67) The Miller Indices for a clinodome of the Monoclinic System is same as that of brachydome of the Orthorhombic System. Which of the following statements is CORRECT for the given information?

- A) In clinodome the a-axis gets intersected while in brachydome the a-axis remains parallel to the dome face
  - B) Both the forms have a-axis parallel to the dome face
  - C) The optic axis in clinodome is c while in brachydome it is b
  - D) The Weiss parameters for clinodome are  $1a \ 1b \ 1c$  while, for brachydome it is  $\infty a \ 1b \ 1c$
- 

68) The chromite deposits formed by primary magmatic process shows cumulus texture because it is formed by:

- A) Injection
- B) Dissemination
- C) Exsolution
- D) Segregation

69) In mining, the commercially worthless material or impurities associated with an ore mineral in the deposit are termed as:

- A) Phenocrysts
  - B) Gangue
  - C) Matrix
  - D) Gossan
- 

70) Which one of the following varieties of garnet does not belong to the Ugrandite group?

- A) Andradite
  - B) Grossular
  - C) Uvarovite
  - D) Spessartine
- 

71) The brachiopods which have brachial valve more convex than pedicle valve are

- A) biconvex
  - B) resupinate
  - C) dorsi-biconvex
  - D) ventri-biconvex
- 

72) In which of the following cases a flowing Artesian Well results?

- A) Piezometric surface lies below the land surface
  - B) Piezometric surface dips along the bedding plane
  - C) Piezometric surface lies above the land surface
  - D) Piezometric surface is vertical
- 

73) Which of the following bivalves possesses long hinge line?

- A) *Venus*
- B) *Unio*
- C) *Trigonia*
- D) *Arca*

74) An area has massive flat-lying sandstone formation with a well-developed joint system marked by right-angled bends. Which of the following drainage patterns is characteristic of this area?

- A) Centripetal drainage pattern
  - B) Rectangular drainage pattern
  - C) Radial drainage pattern
  - D) Trellised drainage pattern
- 

75) Which of the following minerals is an example of an early magmatic dissemination deposit?

- A) Chromite
  - B) Diamond
  - C) Hematite
  - D) Graphite
- 

76) The study of trace fossils, which includes the tracks, trails and burrows of ancient organisms, as well as the casts and molds of where they rested on and within the sediment is known as:

- A) Ecclesiology
  - B) Paleopathology
  - C) Ichnology
  - D) Myrmecology
- 

77) In a normal fault, the hanging wall moves

- A) upwards relative to the foot wall
  - B) downwards relative to the foot wall
  - C) sideways relative to the foot wall
  - D) parallelly to the foot wall
- 

78) International projection is a modified polyconic projection used to make topographic sheets on a scale of

- A) 1:50000
  - B) 1:1000000
  - C) 1:10000
  - D) 1:100000
- 

79) The true bearing of a location X from another location Y is  $065^\circ$ . What will be the true bearing of Y from X?

- A)  $065^\circ$
  - B)  $155^\circ$
  - C)  $025^\circ$
  - D)  $245^\circ$
- 

80) Cratons are the part of the earth's continental crust which has attained stability and was least affected by deformation during the later periods. The oldest craton of the Indian Shield is:

- A) Bundelkhand Craton
  - B) Aravalli Craton
  - C) Singhbhum Craton
  - D) Dharwar Craton
- 

81) The principle of floral and faunal succession in stratigraphy gives the same finding as that given by the

- A) principle of cross-cutting relationship
  - B) principle of original lateral horizontality
  - C) principle of lateral horizontality
  - D) principle of superposition
- 

82) In taping survey, if the measured distance is 250.55 m, the assumed length of the tape is 25 m, while the actual length of the tape is 25.005 m, what is the actual distance measured with this tape?

- A) 249.86 m
  - B) 250.60 m
  - C) 250.005 m
  - D) 250 m
- 

83) The discipline that deals with the aspects of spatial data handling like structure and character of spatial information, its capture, classification, qualification, storage, processing, portrayal and dissemination, is known as:

- A) Surveying
- B) Spatial informatics
- C) Geoinformatics
- D) Remote sensing

84) An aerial photograph shows the relief displacement of a tower in the photo as 2 mm, and the radial distance of the top of the tower from the centre of the photo is 50 mm. If the flying height is 1200 m above the base of the tower, what will be the height of the tower?

- A) 56 m
  - B) 40 m
  - C) 50 m
  - D) 48 m
- 

85) A fossilized bivalve shell was found with a pallial sinus and heavy concentric ribs on its surface. Which of the following represents its appropriate lifestyle?

- A) Motile epifaunal
  - B) Deep infaunal
  - C) Epifaunal
  - D) Shallow infaunal
- 

86) A valley formed by glaciers is represented by a contour map in which, the higher value contours are closely spaced the while lower value contours are far apart. The shape of this valley will be

- A) L-shaped
  - B) U-shaped
  - C) I-shaped
  - D) V-shaped
- 

87) Trilobites are a fossil group of extinct marine arthropods. An order of trilobites that was blind and lacking sutures was:

- A) Redlichiida
  - B) Agnostida
  - C) Phacopida
  - D) Proetida
- 

88) The direction of the line of intersection of the inclined beds with the horizontal is known as:

- A) Strike
- B) Dip
- C) Rake
- D) Plane

89) The map projection whose parallels are all non-concentric circular arcs, except for a straight equator is

- A) Gnomonic projection
  - B) Mercator projection
  - C) Polyconic projection
  - D) Conic projection
- 

90) The A-axis imbrication in conglomerates is formed due to the transport of clasts being carried under suspension. Which one of the following statements is TRUE in this regard?

- A) Long axis is parallel to the flow direction
  - B) Short axis is parallel to the flow direction
  - C) Short axis is reverse to the flow direction
  - D) Long axis is perpendicular to the flow direction
- 

91) A pelitic rock metamorphosed in Hornblende Hornfels facies will differ from a pelitic rock metamorphosed in Albite-Epidote Hornfels facies in mineral assemblage in the

- A) absence of quartz
  - B) absence of feldspar
  - C) absence of muscovite
  - D) absence of chlorite
- 

92) The state of hydrostatic stress is pictorially represented by a stress ellipsoid which has

- A) spherical shape
  - B) oblate shape
  - C) prolate shape
  - D) octal shape
- 

93) A photograph captured on a scale of 1:12500 shows two road intersections, which are then projected on a topographic map. The measured distance between the intersections on the photograph is 94.4 mm and on the map is 47.2 mm. What is the scale of the map?

- A) 1:25000
- B) 1:2000
- C) 1:250000
- D) 1:12500

94) Which of the following software is extensively used in geographic information system techniques?

- A) Corel Draw
  - B) ArcGIS
  - C) Adobe Photoshop
  - D) Google Earth
- 

95) A slope was measured in tape survey to have a length of 20 metres. The angle of slope is  $30^\circ$ . What will be actual horizontal distance after slope correction?

- A) 20 m
  - B) 10 m
  - C)  $10\sqrt{3}$  m
  - D)  $10\sqrt{2}$  m
- 

96) Which of the following rocks forms the best aquifers?

- A) Granite
  - B) Sandstone
  - C) Shale
  - D) Marble
- 

97) Gullies are formed by the erosion of unconsolidated material by runoff and develop where rainfall collects and flows across in small rivulets. Short gullies with a V-shaped cross-section tend to develop in

- A) loamy and peaty soil
  - B) sandy and gravel soil
  - C) clayey soil
  - D) silty soil
- 

98) The map projection that is placed on cylindrical surfaces is known as:

- A) Stereographic projection
- B) Albers projection
- C) Mercator projection
- D) Conic projection

99) Which of the following rocks is NOT a plutonic igneous rock?

- A) Basalt
  - B) Granodiorite
  - C) Granite
  - D) Gabbro
- 

100) The true bearing of an object is  $166^\circ$ . What will be its compass bearing?

- A)  $S14^\circ E$
- B)  $N76^\circ E$
- C)  $S76^\circ E$
- D)  $N14^\circ E$

Answer Keys

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