

# CSIR UGC NET

## EARTH SCIENCE

### SOLVED SAMPLE PAPER



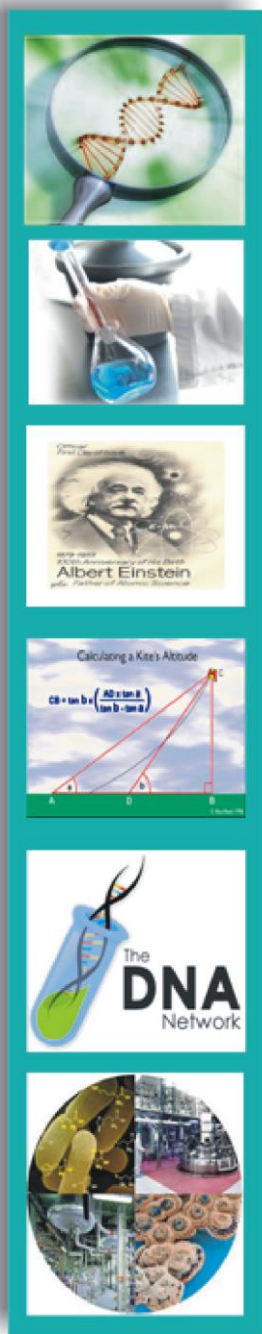
\* DETAILED SOLUTIONS



9001894070



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## CSIR NET - EARTH SCIENCE

### MOCK TEST PAPER

- *This paper contains 75 Multiple Choice Questions*
- *part A 15, part B 35 and part C 25*
- *Each question in Part 'A' and 'B' carries two marks*
- *Part 'C' carries 4 marks respectively.*
- *There will be negative marking @ 0.5 marks in Part 'A' and 'B', 1.32 marks in Part 'C' for each wrong answer*
- *Pattern of questions : MCQs*
- *Total marks : 200*
- *Duration of test : 3 Hours*

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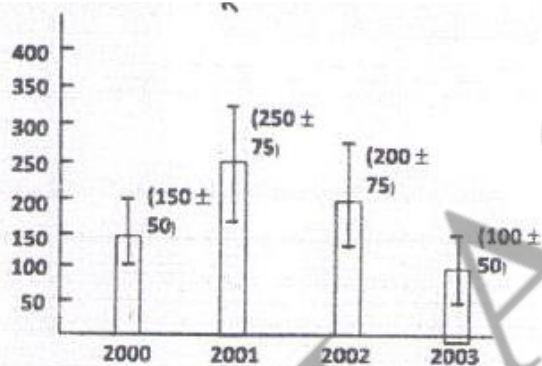
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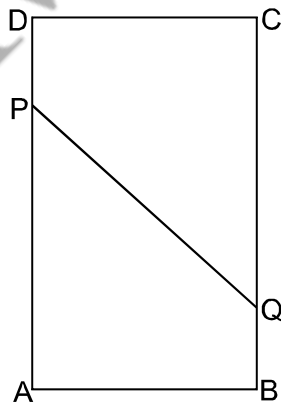
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## PART-A (Q. 1-15)

1. Average yield of a product in different years is shown in the histogram. If the vertical bars indicate variability during the year, then during which year was the percent variability over the average of that year the least?



- (1) 2000  
 (2) 2001  
 (3) 2002  
 (4) 2003
2. A rectangular sheet ABCD is folded in such a way that vertex A meets vertex C, thereby forming a line PQ. Assuming  $AB = 3$  and  $BC = 4$ , find PQ. Note that  $AP = PC$  and  $AQ = QC$ .



$$(1) \frac{13}{4}$$

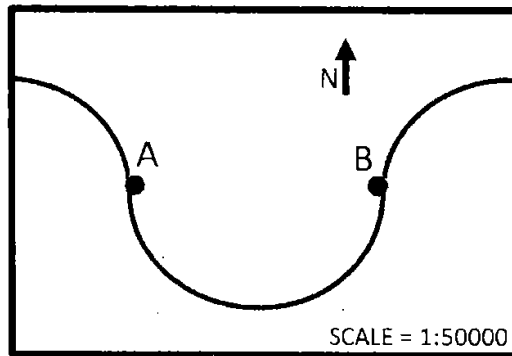
$$(2) \frac{15}{4}$$

$$(3) \frac{17}{4}$$

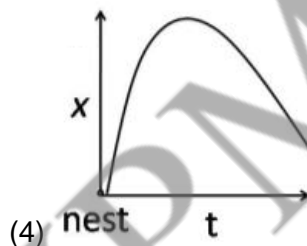
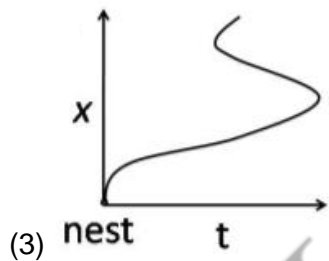
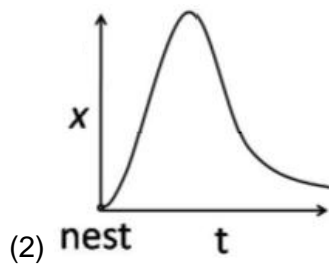
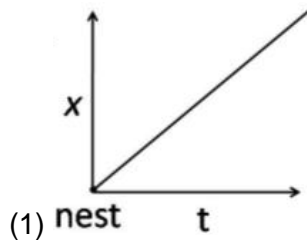
$$(4) \frac{19}{4}$$

3. Density of a rice grain is 1.5 g/cc and bulk density of rice heap is 0.80 g/cc. If a 1 litre container is completely filled with rice, what will be the approximate volume of pore space in the container?
- (1) 350 cc  
(2) 465 cc  
(3) 550 cc  
(4) 665 cc
4. A peacock perched on the top of a 12 m high tree spots a snake moving towards its hole at the base of the tree from a distance equal to thrice the height of the tree. The peacock flies towards the snake in a straight line and they both move at the same speed. At what distance from the base of the tree will the peacock catch the snake?
- (1) 16 m  
(2) 18 m  
(3) 14 m  
(4) 12 m

5. The map given below shows a meandering river following a semi-circular path, along which two villages are located at A and B. The distance between A and B along the east-west direction in the map is 7 cm. What is the length of the river between A and B in the ground?



- (1) 1.1 km  
 (2) 3.5 km  
 (3) 5.5 km  
 (4) 11.0 km
6. How many nine-digit positive integers are there, the sum of squares of whose digits is 2?  
 (1) 8  
 (2) 9  
 (3) 10  
 (D) 11
7. A bird leaves its nest and flies away. Its distance  $x$  from the nest is plotted as a function of time  $t$ . Which of the following plots cannot be right?

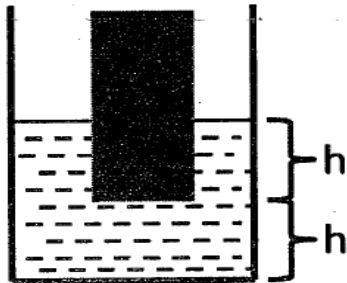


8. What is the next number in the following sequence?

39, 42, 46, 50, ...

- (1) 52
- (2) 53
- (3) 54
- (4) 55

9. A solid cylinder of basal area  $A$  was held dipped in water in a cylindrical vessel of basal area  $2A$  vertically such that a length  $h$  of the cylinder is immersed. The lower tip of the cylinder is at a height  $h$  from the water in the vessel when the cylinder is taken out?



- (1)  $2h$   
 (2)  $\frac{3}{2}h$   
 (3)  $\frac{4}{3}h$   
 (4)  $\frac{5}{4}h$
10. How many pairs of positive integers have gcd 20 and lcm 600?  
 (gcd = greatest common divisor; lcm = least common multiple)
- (1) 4  
 (2) 0  
 (3) 1  
 (4) 7
11. Consider a right-angled triangle ABC where  $AB = AC = 3$ . A rectangle APOQ is drawn inside it, as shown, such that the height of the rectangle is twice its width. The rectangle is moved horizontally by a distance 0.2 as shown schematically in the diagram (not to scale).

What is the value of the ratio  $\frac{\text{Area of } \triangle ABC}{\text{Area of } \triangle OST}$  ?

- (1) 625
- (2) 400
- (3) 225
- (4) 125

12. A shopkeeper purchases a product for Rs. 100 and sells it making a profit of 10%. The customer resells it to the same shopkeeper incurring a loss of 10%. In these dealings the shopkeeper makes
- (1) no profit, no loss
  - (2) Rs. 11
  - (3) Re. 1
  - (4) Rs. 20
13. In 450 g of pure coffee powder 50 g of chicory is added. A person buys 100 g of this mixture and adds 5 g of chicory to that. What would be the rounded-off percentage of chicory in this final mixture?
- (1) 10
  - (2) 5
  - (3) 14
  - (4) 15
14. Following table provides figures (in rupees) on annual expenditure of a firm for two years - 2010 and 2011.



Category	2010	2011
Raw material	5200	6240
Power & fuel	7000	9450
Salary & wages	9000	12600
Plant & machinery	20000	25000
Advertising	15000	19500
Research & Development	22000	26400

In 2011, which of the following two categories have registered increase by same percentage?

- (1) Raw material and Salary & wages
- (2) Salary & wages and Advertising
- (3) Power & fuel and Advertising
- (4) Raw material and Research & Development

15. Find the missing sequence in the letter series.

B, FH, LNP, -----.

- (1) SUMY
- (2) TUVW
- (3) TVXZ
- (4) TWXZ

### **PART-B (Q. 16-50)**

16. The Montmorillonite clay used in oil drilling is

- (1) Bentonite
- (2) Fuller's earth
- (3) Barium mud

- (4) None of the above
17. The maximum number of symmetry elements in a stereographic projection belong to
- (1) Hexagonal crystal
  - (2) Cubic crystal
  - (3) Monoclinic crystal
  - (4) Orthorhombic crystal
18. If a network of parallel streams are developed along strike and dip of the formations, the drainage pattern is referred as
- (1) Braided
  - (2) Annular
  - (3) Trellis
  - (4) Dendritic
19. In a structure resembling a plunging syncline, if the stratigraphic order is not known it is termed as
- (1) Antiform fold
  - (2) Synform fold
  - (3) Cylindrical fold
  - (4) Plunging fold
20. The variety of limestone derived from a granitic terrain is
- (1) Subgraywacke
  - (2) Arkose
  - (3) Conglomerate
  - (4) Lithic arenite
21. The molecular proportion of minerals derived from chemical analysis \_\_\_\_\_ classification
- (1) Normative
  - (2) Mineralogical

- (3) Chemical  
(4) Textural
- 22.** Analogous chemical formulae and similar structures characterize
- (1) Isomorphous  
(2) Polymorphous  
(3) Pseudomorphous  
(4) Isotopes
- 23.** In a vertical section where a bed is striking North- East, the correct dip of the bed will be
- (1) 10° NW  
(2) 45° NW - SE  
(3) 0° SE  
(4) 90° N - S
- 24.** Meteorites containing 50% silicates are
- (1) Tektites  
(2) Chondrites  
(3) Achondrites  
(4) Pallasites
- 25.** Relict oceanic crust is represented by
- (1) Tholeiite  
(2) Ophiolite  
(3) Tektite  
(4) None
- 26.** Contemporary volcanism and sedimentation is characteristic of
- (1) Eugeosyncline  
(2) Miogeosyncline

- (3) Parageosyncline  
(4) Tephrogeosyncline
- 27.** Pink interference colors are typical to
- (1) Garnet  
(2) Augite  
(3) Sphene  
(4) Aegirine
- 28.** Tectonic disturbance is associated with
- (1) Orthoconglomerate  
(2) Paraconglomerate  
(3) Petromict conglomerate  
(4) Intraformational conglomerate
- 29.** The end product of fractional crystallization of a Basaltic magma
- (1) Gabbro  
(2) Granite  
(3) Dolerite  
(4) Diorite
- 30.** In a plunging fold where both bedding and cleavage dip in the same direction but cleavage shows gentle dips than bedding, the rocks are
- (1) Right side up  
(2) Overturned  
(3) Cannot be determined  
(4) Inclined
- 31.** Oceanic ridges are called are oceanic ridges when they are
- (1) Spreading centers

- (2) Extinct  
(3) Bounded by Volcanoes  
(4) Seismically active
- 32.** Blanket sands are associated with  
(1) Quartz - arenite  
(2) Arkoses  
(3) Graywackes  
(4) Calc - arenite
- 33.** Rocks in which modal olivine exceeds 90% are termed  
(1) Kimberlite  
(2) Saxonite  
(3) Websterite  
(4) Dunite
- 34.** The two leading solvents in supergene enrichment are  
(1) Ferric sulphate / Ferrous sulphate  
(2) Ferrous sulphate / Sulphuric acid  
(3) Ferric sulphate / Sulphuric acid  
(4) Nitric acid / Sulphuric acid
- 35.** Magmatic carbonates are termed  
(1) Carbonatites  
(2) Kimberlites  
(3) Komatiite  
(4) Harzburgite
- 36.** Channel bars indicate  
(1) Graded streams  
(2) Valley flats

- (3) Braided streams  
(4) Flood plains
37. The present day atmosphere and ocean are result of
- (1) Cosmic precipitation  
(2) Volcanic exhalation  
(3) Primordial ocean and atmosphere evolution  
(4) None of the above
38. When two continental plate weld, it is described as
- (1) Suture zone  
(2) Andesite line  
(3) Island arc  
(4) Subduction zone
39. The body chamber filled with gas (air) in cephalopods is called
- (1) Phragmacone  
(2) Gyrocone  
(3) Septa  
(4) Siphuncle
40. The Gondwana flora belonging to Parzora stage is
- (1) Schizoneura  
(2) Phyllothea  
(3) Noegerophthiosis  
(4) Gangamopteris
41. Which of the following gastropods show both dextral and sinistral coiling?
- (1) Physa  
(2) Murex

- (3) Fusina  
(4) Helix
- 42.** The earliest trilobites are characterised by
- (1) A large pygidium  
(2) Primitive condition of eyes  
(3) Absence of genal angle  
(4) Presence of genal angle
- 43.** The cretaceous period is marked by
- (1) Disappearance of certain vertebrates  
(2) Appearance of flowering plants  
(3) Disappearance of flowering plants  
(4) None of the above
- 44.** Indian iron and manganese deposits are mostly found in
- (1) Palaeozoic  
(2) Precambrian  
(3) Mesozoic  
(4) Cenozoic
- 45.** The most extensive felsic magnetism during the Vindhyan time was
- (1) Malani volcanic  
(2) Dras volcanic  
(3) Bhimtal volcanic  
(4) Deccan volcanic
- 46.** Rajmundry Sandstones and Cuddalore Sandstones are equivalents of
- (1) Siwaliks  
(2) Vindhyan

- (3) Karewas  
(4) Kurnools
- 47.** Magnesite deposits are commonly associated with
- (1) Sandstones and Quartzites  
(2) Peridotites and limestone/ dolomite  
(3) Ultrabasic rocks only  
(4) Granites and granodiorites
- 48.** The most favourable sites for placer deposits are
- (1) Upper reaches  
(2) Lower reaches  
(3) Middle reaches  
(4) None of the above
- 49.** In echinoids the pore pair in the plates of the ambulacral areas may be surrounded by
- (1) Peripodium  
(2) Loven's plane  
(3) Branchiae  
(4) Pedicellariae
- 50.** In brachiopods, the hinge line which is much less than the width of the shell and is strongly curved is referred as
- (1) Megathyrid  
(2) Spirifer  
(3) Submegathyrid  
(4) Terebratulid



**PART-C (Q. 51-75)**

51. The geological range of bivalves is
- (1) Ordovician to recent
  - (2) Devonian to Cretaceous
  - (3) Triassic to Cretaceous
  - (4) Jurassic to Recent
52. Which of the following best defines high and low tide limits in the marine environment?
- (1) Neritic
  - (2) Neritopelagic
  - (3) Bathyal
  - (4) Littoral
53. The process responsible for rims of Augite enclosing Olivine crystals is
- (1) Fractional crystallisation
  - (2) Gravity settling
  - (3) Assimilation
  - (4) Magmatic mixing
54. Eclogites are distinguished from the amphiboles on the basis of
- (1) Pyroxene
  - (2) Amphibole
  - (3) Garnet
  - (4) Plagioclase
55. The highest temperature and the highest pressure facies among the following
- (1) Granulite
  - (2) Eclogite
  - (3) Blueschist

- (4) Sanidinite
56. Owen fracture zone lies in the
- (1) Pacific ocean
  - (2) Atlantic ocean
  - (3) Arabian sea
  - (4) Bay of Bengal
57. Submergence of an oceanic crust is indicated by
- (1) Plate tectonics concept
  - (2) Sea floor spreading
  - (3) Island arcs
  - (4) Seamounts and guyots
58. Formation is the term used to designate mappable units in the scale
- (1) 1 : 10000
  - (2) 1 : 100000
  - (3) 1 : 50000
  - (4) 1 : 500
59. The most important source for freshwater on the earth is
- (1) Polar ice caps
  - (2) Seas
  - (3) River discharges
  - (4) Ground water
60. Fossil excrements are described as
- (1) Casts
  - (2) Coprolites
  - (3) Moulds
  - (D) Tracks

61. Which of the following lamprophyres is rich in orthoclase?
- (1) Vogesite
  - (2) Kersanite
  - (3) Spessartite
  - (4) Malachite
62. Sieve texture is exhibited by
- (1) Zeolites
  - (2) Scapolites
  - (3) Granites
  - (4) None of the above
63. The manganese deposits of Srikakulam are formed due to the alteration of
- (1) Gondites
  - (2) Kodurites
  - (3) Khondalites
  - (4) Charnockite
64. The Sausar group is associated with
- (1) Fe
  - (2) Zn
  - (3) Sn
  - (4) Mn
65. Bedded chert is formed due to
- (1) Diagenetic replacement
  - (2) Direct precipitation from colloidal silica
  - (3) Chemical precipitation of silica
  - (4) Organic precipitation of silica
66. Presence of incipient crystals and the dominant temperature effects is a characteristic

feature of

- (1) Granulose fabric
- (2) Hornfels fabric
- (3) Schistose fabric
- (4) Gneissose fabric

67. When a collision between a continental plate and an oceanic plate takes place, the
- (1) continental plates move down
  - (2) oceanic plate moves down
  - (3) plates get sutured
  - (4) plates get sutured and the continental plate moves down
68. At sea level and at a temperature of 212 °F (100 °C), water
- (1) Freezes
  - (2) Boils
  - (3) Condenses
  - (4) Turns to a solid
69. In the future, which of the following is unlikely?
- (1) There will be an increased chance of flash flooding and coastal inundation.
  - (2) Flood risk will increase due to population growth and urbanisation.
  - (3) Improvements in flood forecasting and warning technologies will reduce the impacts of floods.
  - (4) We will be able to eliminate the risk of flooding
70. Which of the following features in a fossil shell of pelecypod indicates the burrowing habit of the animal?
- (1) Adductor impression
  - (2) Pallial sinus
  - (3) Dentition

- (4) Ligament grove
71. A framework of support systems, such as transportation and utilities, that makes it possible to have specific land uses and built environment that facilitate people's daily lives and the nation's economy is called \_\_\_\_\_.
- (1) a coliseum
  - (2) a commercial collective
  - (3) socio-commercial environmentalism
  - (4) infrastructure
72. Bridges, dams, and levees that have specific purposes to facilitate people's activities and the nation's commerce is called \_\_\_\_\_.
- (1) environmental assets
  - (2) infrastructure capital
  - (3) symbolic commercialism
  - (4) commercial mandates
73. The ability to see the relationship between individual experiences and the larger society is called \_\_\_\_\_.
- (1) organic solidarity
  - (2) mechanical solidarity
  - (3) the social imperative
  - (4) the sociological imagination
74. Geoclinal sedimentation involves
- (1) Thick sedimentary sequences of deep water
  - (2) Thick sedimentary sequences of shallow water
  - (3) Thin sedimentary sequences of shallow water
  - (4) None of the above
75. The exfoliation in vermiculite refers to

- (1) Its ability to break down along cleavage surfaces
- (2) Expand on heating
- (3) Contract on heating
- (4) None of the above

## ANSWER KEY

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	2	2	2	1	3	1	3	2	2	1	3	2	3	4	3
Que.	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Ans.	2	2	3	2	2	1	1	2	4	2	1	3	4	2	2
Que.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Ans.	4	1	4	3	1	3	2	1	1	3	1	2	1	2	1
Que.	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Ans.	1	2	3	1	4	1	4	1	1	2	4	4	3	1	2
Que.	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Ans.	1	1	2	4	2	2	2	2	4	2	4	2	4	1	2

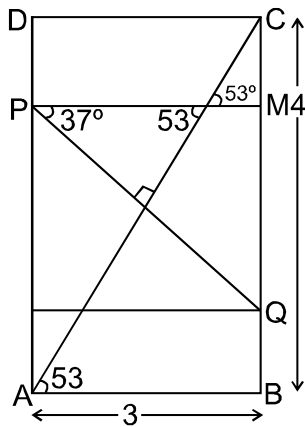
1.(2) The percentage of variability over the average of that year

$$\text{year 2000} \rightarrow \left( \frac{50}{150} \times 100 \right) = 33.33\%$$

$$\text{year 2001} \rightarrow \left( \frac{75}{250} \times 100 \right) = 30\%$$

$$\text{year 2002} \rightarrow \left( \frac{75}{200} \times 100 \right) = 37.5\%$$

$$\text{year 2003} \rightarrow \left( \frac{50}{100} \times 100 \right) = 50\%$$



2.(2)

Given  $AB = 3$

$$BC = 4$$

then from using pythagoras

$$AC = 5 \text{ m}$$

and  $\angle CAB = \theta$

$$\text{then } \tan \theta = \frac{4}{3} = \tan 53^\circ \quad \dots(i)$$

Then in  $\triangle PMQ$

$$\sec 37^\circ = \frac{PQ}{PM} \quad \dots(ii)$$

Using  $\triangle ABC$

$$\sec 37^\circ = \frac{5}{4} \quad \dots(iii)$$

Using (iii) in (ii)

$$\frac{5}{4} \times PM = PQ$$

$$PQ = \frac{5}{4} \times 3 = \frac{15}{4}$$

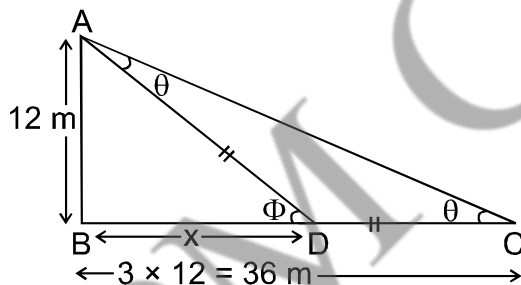
3.(2) Using allegation Formula:

Quantity of Cheaper/ Quantity of dearer = (high value-mean value)/(mean value-low value)

volume of pour Space/Volume of rice =  $1.5 - 0.80.8 - 0 = 78$

So volume of pour space =  $1000/15 \times 7 = 466.66$  approximately 465.

4.(1) Figure according to question AD and CD are equal because peacock and snake has equal speed.



let  $\angle DAC = \theta$

from the fig.  $\angle DCA = \theta$

and let  $\angle ADB = \Phi$

according to Geometry

$$\Phi = 2\theta$$

$$\tan 2\theta = \tan \Phi$$



$$\frac{2 \tan \theta}{1 - \tan^2 \theta} = \tan \Phi$$

from the fig.  $\tan \theta = \frac{12}{36} = \frac{1}{3}$

$$\tan \Phi = \frac{12}{x}$$

$$\frac{\frac{2}{3}}{1 - \left(\frac{1}{3}\right)^2} = \frac{12}{x}$$

$$\frac{\frac{2}{3}}{\frac{8}{9}} = \frac{12}{x}$$

$$\frac{2}{3} \times \frac{9}{8} = \frac{12}{x}$$

$$\frac{1}{4 \times 4} = \frac{1}{x}$$

$$x = 16 \text{ m}$$

**5(3)** Distance of river on ground = perimeter of semi circle

$$= \pi \times r = 3.14 \times 3.5 = 11 \text{ cm}$$

According to Scale =  $11 \times 50,000 \text{ cm} = 5,50,000 \text{ cm}$  or 5.5 km.

**6.(1)** Given that the sum of squares of a nine-digit number is 2. Then the possible numbers would be

**Case.I :**

$$100000001$$

$$1^2 + 0^2 + 0^2 + 0^2 + 0^2 + 0^2 + 0^2 + 0^2 + 1^2 = 2$$

**Case II :** 10000010

$$1^2 + 0^2 + 0^2 + 0^2 + 0^2 + 0^2 + 0^2 + 1^2 + 0^2 = 2$$

**Case III :** 10000100

$$1^2 + 0^2 + 0^2 + 0^2 + 0^2 + 1^2 + 0^2 + 0^2 = 2$$

**Case IV :** 10001000

$$1^2 + 0^2 + 0^2 + 0^2 + 0^2 + 1^2 + 0^2 + 0^2 + 0^2 = 2$$

**Case V :** 100010000

$$1^2 + 0^2 + 0^2 + 0^2 + 1^2 + 0^2 + 0^2 + 0^2 + 0^2 = 2$$

**Case VI :** 100100000

$$1^2 + 0^2 + 0^2 + 1^2 + 0^2 + 0^2 + 0^2 + 0^2 + 0^2 = 2$$

**Case VII :** 101000000

$$1^2 + 0^2 + 1^2 + 0^2 + 0^2 + 0^2 + 0^2 + 0^2 + 0^2 = 2$$

**Case VIII :** 110000000

$$1^2 + 1^2 + 0^2 + 0^2 + 0^2 + 0^2 + 0^2 + 0^2 + 0^2 = 2$$

**7.(3)** Given that

$$y = x$$

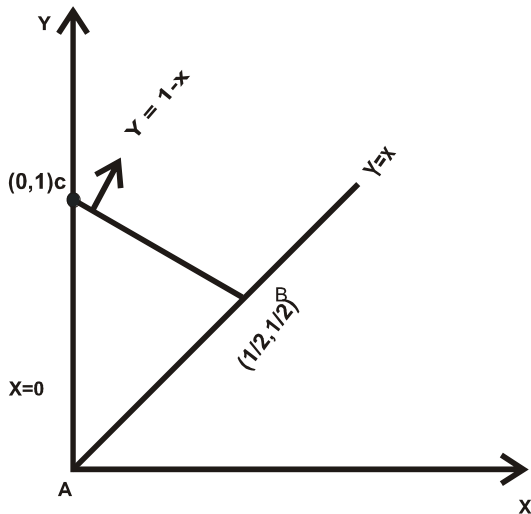
$$y = 1 - x \text{ and } x = 0$$

$$AB = BC$$

$$\& y = x = m_1 = 1$$

$$y = -x + 1 = m_2 = -1$$

so  $m_1 m_2 = -1$  , triangle is right - angled.



8.(2) The given sequence will follow the pattern 3, 4 4, 3 .....

These are the difference between two consecutive numbers of the sequence.

So.

$$\begin{array}{ccccccc}
 39, & 42, & 46, & 50 & 53 \\
 \underbrace{\quad} & \underbrace{\quad} & \underbrace{\quad} & \underbrace{\quad} & \\
 +3 & +4 & +4 & +3 & 
 \end{array}$$

9.(2) Volume of vessel upto height  $2h$  is equal to  $2a * 2h$  ... (1)

Volume of vessel after removing cylinder =  $2A * h'$  ... (2)

where  $h'$  = new height of water level.

Volume of water = Volume of vessel = Volume of solid

after removing upto height  $2h$  Cylinder upto height cylinder  $h$

$$\Rightarrow 2A * h' = 2A * 2h - A.h$$

$$\Rightarrow h' = \frac{3}{2} h$$

10.(1) gcd = 20

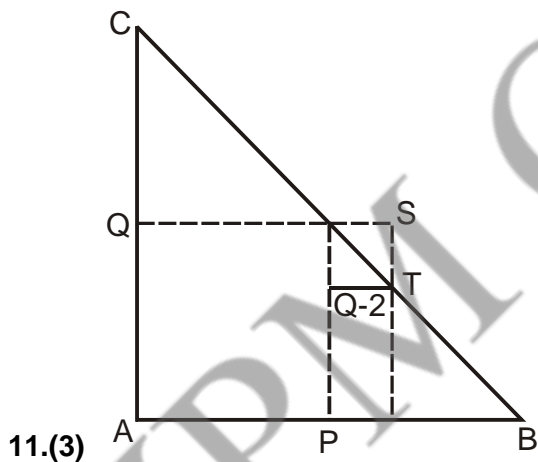
$$\text{lcm} = 600$$

$$\text{lcm} = \frac{x \cdot y}{\text{gcd}}$$

$$x \cdot y = 600 \times 20$$

$$x \cdot y = 2^5 \times 3^1 \times 5^3$$

x	y
$5^1 \times 2^2$	$5^2 \times 2^3 \times 3$
$5^2 \times 2^2$	$5^1 \times 2^3 \times 3$
$5^2 \times 2^3$	$5^1 \times 2^2 \times 3$
$5^2 \times 2^2 \times 3$	$5^1 \times 2^3$



$$AB = AC = 3$$

$$AQ = 2 AP$$

$$\text{Area of } \triangle ABC = \frac{1}{2} b \times h = \frac{1}{2} (3 \times 3) = \frac{1}{2}$$

$$\text{Area of } \Delta QST = \frac{1}{2} (Q.2 \times Q.2) = 0.02$$

$$\text{Ratio} = \frac{9 \times 100}{2 \times 0.02} = 225$$

12.(2) CP for the customer:  $100+10=110$

and 10% of  $110=11$  So customer sells shopkeeper at 99. SO Shopkeeper makes a profit of Rs  $10+1=11$ .

2nd option is correct.

**OR**

A shopkeeper purchases a product Rs.100 and sales it making a profit 10%, then profit = 10 Rs. Again customer resells it to the same increasing a loss of 10%. Then total loss = 11 Rs = Total profit to the shopkeeper =  $1+ 10 = 11$  Rs

13.(3) 500 gm of Pure coffee contains  $\rightarrow$  50 gm of chicory

100 gm of Pure coffee contains  $\rightarrow$  10 gm of chicory

Now;

5 gm is added additionally

i.e., 105 gm of coffee  $\rightarrow$  15 gm of chicory

$$\% = \frac{15}{105} \times 100 = \frac{100}{7} = 14.2\% \approx 14\%$$

14.(4) Raw material and Research & Development have registered increase by same percentage.

Increase in raw material from 2010 to 2011 =  $6240-5200 = 1040$

Percent increase =  $(1040/6240) \times 100 = 16.6 \%$

Increase in Research & Development from 2010 to 2011

$$= 26400 - 22000 = 4400$$

Percent increase =  $(4400/26400) \times 100 = 16.6 \%$

15.(3) The formula used in this operation is as follows:

B (+4), F(+2) H (+4), L (+2) N (+2) P (+4), T(+2) V(+2) X (+2) Z

So next one is TVXZ

- 16.(2) Fuller's earth is a very important clay material used in oil drilling.
- 17.(2) Cubic system has the highest number of the symmetry elements among the 7 crystal system.
- 18.(3) In the trellis pattern the network of the streams are aligned along the strike and dip direction of the formations.
- 19.(2) Synform term is based on the structural form and the syncline term is based on the stratigraphic position (from core to limb the beds are gradually older or younger).
- 20.(2) The sandstone derived from the granite terrain will be arkose.
- 21.(1) This kind of classification is called normative classification, where by chemical analysis, the molecular proportion of the minerals are derived.
- 22.(1) Isomorphs are those substances which have similar lattice structure but different chemical composition.
- 23.(2) Dip direction is the perpendicular direction of the strike direction.
- 24.(4) Pallasites have 50% silicate and 50% stony iron content.
- 25.(2) Ophiolite is the relict oceanic crust where we get the proper sequence of the rock structure of the oceanic crust and it is mainly found in many suture zone.
- 26.(1) The time of Eugeosyncline volcanism and sedimentation occurred simultaneously.
- 27.(3) Sphene has mainly pink interference color which is most of the time diagnostic characteristic though the interference color of the minerals are not the diagnostic characteristic of the minerals because it depends on the thickness, birefringence, path difference of the minerals.
- 28.(4) Intraformational conglomerate is formed due to the different tectonic activity.
- 29.(2) The end product of the Basaltic magma is peridotite rock which is mainly granite.

- 30.(2) Overturned folds are those fold where the dip of the two limbs and the axial plane are in the same direction.
- 31.(4) Otherwise they are called a seismic ridge.
- 32.(1) Blanket sands are mainly associated with quartz arenite.
- 33.(4) Dunite has the olivine content above 90% and to some extent serpentine.
- 34.(3) In the case of supergene enrichment two leading solvents are Ferric sulphate / Sulphuric acid.
- 35.(1) Carbonatites are magmatic carbonate.
- 36.(3) In fluvial environment, the Braided streams mainly forms the channel bars which gradually migrate by epsilon cross bed.
- 37.(2) The present day atmosphere and ocean are the result of the volcanic exhalation.
- 38.(1) Suture zone is the zone where two tectonic plates are welded.
- 39.(1) Phragmacone is called when the chamber of the cephalopods are filled with the air.
- 40.(3) Noegerophthiosis is the Gondwana flora which belongs to the Parzora stage.
- 41.(1) Physa has both sinistral and sometimes dextral coiling.
- 42.(2) The eyes structure of the trilobites had been gradually developed on the course of time. This is very indicative trend of the evolution of the trilobite.
- 43.(1) Disappearance of certain vertebrates was the striking features of the commencing of the cretaceous period though Appearance of the flowering plants is also another characteristics of this period.
- 44.(2) Indian iron (BIF) is two types one was formed in Archean and another was formed in Proterozoic and maganese is also formed in the Precambrian (Archean and Proterozoic).
- 45.(1) Malani rhyolite is the most extensive volcanic activity during Vindhyan. Rhyolite is more viscous magma than Basalt which is more explosive in nature
- 46.(1) Siwaliks sandstone and the cuddalore sandstone have the same age (Upper Miocene)

- 47.(2) Magnesites are mainly found in peridotites, limestone. These are the main host rock of this ore.
- 48.(3) The placer deposits are mainly occur in the middle reach.
- 49.(1) Peripodium is the portion which surrounds the pore pair in the plates.
- 50.(4) The hinge line is very striking feature of the brachiopode, the hingeline of the terebratulid is very smaller than the width of the shell and it is very curvy also.
- 51.(1) Bivalves have been prevailing on the Earth from the Ordovician age to recent age
- 52.(4) Littoral zone is defined by the boundaries which are high tide and low tide limit.
- 53.(1) In the process of the fractional crystallisation the rim texture is mainly formed. Where olivine surrounded by amphibole and amphibole surrounded by pyroxene are found.
54. (1) The main constituents of the amphibolites are hornblend and plagioclase but eclogite also has pyroxene (hypersthene) along with the above mentioned minerals.
- 55.(2) Eclogite facies has the highest temperature and pressure condition. See the P-T graph of the metamorphic facies.
- 56.(4) Owen fracture zone lies in the Bay of Bengal.
- 57.(4) Seamounts and guyots are the indication of the submerged oceanic crust.
- 58.(3) The mapable range for the formation is 1:50000.
- 59.(1) The melting of the polar ice cap is the main source of the fresh water for the earth. Actually it is the part of the hydrological cycle.
- 60.(2) Coprolites are the excrements of the fossils. This has also very important significance.
- 61.(1) Vogesite is the lamprophyre which is very rich in orthoclase
- 62.(1) Zeolites have the sieve texture which is due to the disilusion process
- 63.(2) The main host rock of the manganese deposits of the srikakulam area is kodurite
- 64.(4) The main ore which is found in the sausar Group is Mn ore deposits.
- 65.(2) Bedded chart is formed by the direct precipitation from colloidal silica.



- 66.(2)** Hornfels fabric is mainly formed due to contact aureole where the temperature effect is very dominant feature.
- 67.(2)** Always heavy plate goes down w.r.t the lighter plate.
- 68.(2)** Water boils at 212 °F (100 °C) at sea level. At higher altitudes, it boils at a cooler temperature.
- 69.(4)** It is not possible to eliminate the risk of flooding. Indeed, it is likely that flood risk will increase in the future due to climate change, population growth and urbanisation. However, we can better manage flood risk through improvements in flood forecasting and warning technologies, as well as improved land use planning, floodplain management and integrated water management.
- 70.(2)** Pallial sinus, adductor muscle scar and ligament groove are the features present in the burrowing bivalve.
- 71.(4)** Buildings, houses, and highways that may be used for commercial residential or recreational purposes are called infrastructure.
- 72.(2)** Infrastructure has specific material aspects that would be considered as capital.
- 73.(4)** This concept was developed by C. Wright Mills who had a good sociological imagination.
- 74.(1)** Geoclinal sequences are formed in the deep marine condition. The succession becomes very thick.
- 75.(2)** Exfoliation mainly occur due to temperature fluctuation where rock expands when temperature increases and rocks contracts when temperature decreases.