CSIR UGC NET

GENERAL APTITUDE

SOLVED SAMPLE PAPER
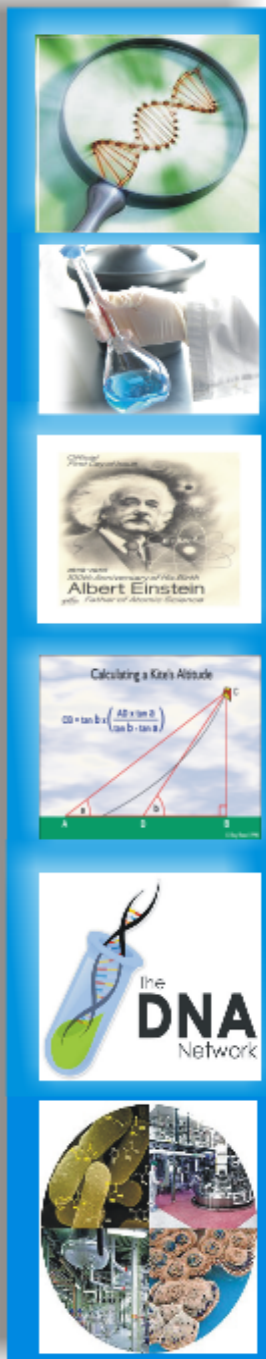

* **DETAILED SOLUTIONS**

CSIR NET - PART-A

MOCK TEST PAPER

- This paper contains 20 Multiple Choice Questions

- Each question carries 2 marks

- There will be negative marking of 0.5 marks for each wrong answer.

- **Pattern of questions : MCQs**
- **Total marks** : 40
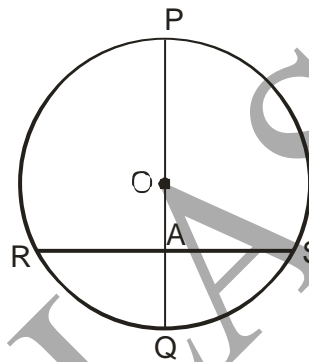- **Duration of test** : 45 Mins.

VPM CLASSES

FOR IIT-JAM, JNU, GATE, NET, NIMCET AND OTHER ENTRANCE EXAMS

Web Site www.vpmclasses.com E-mail-vpmclasses@yahoo.com

1. Twenty-four clerk can clear 180 files in 15 days. Number of clerk required to clear 240 files in 12 days is

(1) 38

(2) 39

(3) 40

(4) 42

2. In the given figure, RA = SA = 9cm and QA = 7cm. If PQ is the diameter, then radius is

(1) $\frac{65}{7}$ cm

(2) $\frac{130}{7}$ cm

(3) 8 cm

(4) None

3. If the circles are drawn with radii R_1, R_2, R_3 with center at the vertices of a triangle as shown in figure. Side of triangle is a, b, c respectively, then $R_1 + R_2 + R_3$ is equal to
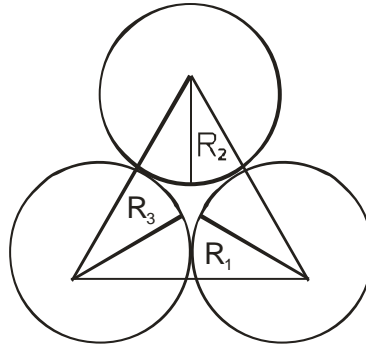
(1) $3(a + b + c)$

(2) $\dfrac{1}{3}(a + b + c)$

(3) $\dfrac{1}{2}(a + b + c)$

(4) $2(a + b + c)$

4.   Study the following graph and answer the question given below it

Production in a Tool Factory

— Number of Tools   ----- Value

What was the value of each tool in 1985?

(1) Rs $5\frac{1}{3}$ thousand

(2) Rs 50 thousand

(3) Rs 5, 103

(4) $5\frac{5}{9}$

5. The total adults in a city is 60000. The various sections of them are indicated below in the circle
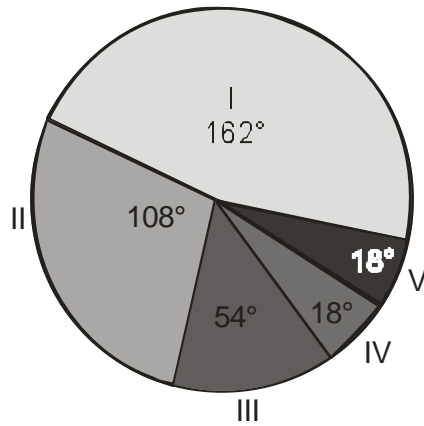
I → employees in the public sector
II → employees in the private sector
III → employees in the corporate sector
IV → self employed
V → unemployed

What percentage of the employed persons is self-employed?

(1) $5\frac{5}{19}$

(2) $19\frac{1}{5}$

(3) 20

(4) 5

6. Look at this series: 14, 28, 20, 40, 32, 64, ... What number should come next?

(1) 52

(2) 56

(3) 96

(4) 128

7. A car owner buys petrol at Rs.7.50, Rs. 8 and Rs. 8.50 per liter for three successive years. What approximately is the average cost per liter of petrol if he spends Rs. 4000 each year?

(1) Rs. 7.98

(2) Rs. 8

(3) Rs. 8.50

(4) Rs. 9

8. In a certain store, the profit is 320% of the cost. If the cost increases by 25% but the selling price remains constant, approximately what percentage of the selling price is the profit?

(1) 30%

(2) 70%

(3) 100%

(4) 250%

9. Today is Friday after 62 days, it will be :

(1) Thursday

(2) Friday

(3) Wednesday

(4) Tuesday

10. A car travelling with of its actual speed covers 42 km in 1 hr 40 min 48 sec. Find the

actual speed of the car.

(1) $17\dfrac{6}{7}$ km/hr

(2) 25 km/hr

(3) 30 km/hr

(4) 35 km/hr

11. P is a working and Q is a sleeping partner. P puts in Rs. 3400 and Q puts Rs.6500. P

receives 20% of the profits for managing. The rest is distributed in proportion to their

capitals. Out of a total profit of Rs.990, how much did P get ?

(1) 460

(2) 470

(3) 450

(4) 480

12. A lawn is the form of a rectangle having its side in the ratio 2:3 The area of the lawn is

1/6 hectares. Find the length and breadth of the lawn.

(1) 25m

(2) 50m

(3) 75m

(4) 100 m

13. An aeroplane covers a certain distance at a speed of 240 kmph in 5 hours. To cover the same distance in 1 hours, it must travel at a speed of:

(1) 300 kmph

(2) 360 kmph

(3) 600 kmph

(4) 720 kmph

14. Find out the missing number of the given question:

2	7	4
5	2	3
1	?	6
10	42	72

(1) 2

(2) 4

(3) 5

(4) 3

15. All of the following are the same in a manner. Find out the one which is different among them:

(1) BFJQ

(2) RUZG

(3) GJOV

(4) ILQX

16. A bag contains 4 white, 5 red and 6 blue balls. Three balls are drawn at random from the bag. The probability that all of them are red is:

(1) $\dfrac{1}{22}$

(2) $\dfrac{3}{22}$

(3) $\dfrac{2}{91}$

(4) $\dfrac{2}{77}$

17. When two dice are thrown simultaneously, what is the probability that the sum of the two numbers that turn up is less than 11?

(1) $\dfrac{5}{6}$

(2) $\dfrac{11}{12}$

(3) $\dfrac{1}{6}$

(4) $\dfrac{1}{12}$

18. Two coins are tossed, find the probability that two heads are obtained

(1) $\dfrac{1}{2}$

(2) $\dfrac{1}{4}$

(3) $\dfrac{1}{6}$

(4) 1

19. Which letter replaces the question mark?

D		F		I	
	X		R		M
E		M		O	
	A		V		R
G		N		V	
	E		A		?

(1) L

(2) K

(3) J

(4) X

20. Which letter replaces the question mark?

FM   H   CH

RL   P   GG

SJ   F   NI

DK   ?   BE

(1) Y

(2) T

(3) I

10

(4) H

ANSWER KEY

Que	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans	3	1	3	4	1	2	1	2	4	4	2	2	4	4	1
Que	16	17	18	19	20										
Ans	3	2	2	4	4										

Hints and Solutions

1.(3) $\dfrac{m_1 D_1}{w_1} = \dfrac{m_2 D_2}{w_2}$

$\dfrac{24 \times 15}{180} = \dfrac{m_2 \times 12}{24}$

$m_2 = 40$

2.(1) $\dfrac{RA \times SA}{QA} = PA \Rightarrow \dfrac{9 \times 9}{7} = PA$

Diameter = PA + AQ

$\dfrac{81}{7} + 7 = \dfrac{130}{7}$

Radius = $\dfrac{\text{Diameter}}{2}$ ∴ Radius = $\dfrac{65}{7}$

3.(3) $R_1 + R_2 = a$

$R_2 + R_3 = b$

$R_3 + R_1 = c$

$R_1 + R_2 + R_2 + R_3 + R_3 + R_1 = a + b + c$

$\Rightarrow \quad R_1 + R_2 + R_3 = \dfrac{a + b + c}{2}$

4. (4) Value of each tool in 1985

$$= \frac{10 \times 10^7}{18 \times 10^3} \qquad \text{[Since 1 crore} = 10^7]$$

$$= 5\frac{5}{9} \text{ Thousand}$$

5.(1) The required percentage $\quad = \dfrac{18}{(360 - 18)} \times 100$

(since total employed $= 360 -$ unemployed)

$$= \frac{18}{342} \times 100 = 5\frac{5}{19}\%$$

6.(2) This is an alternating multiplication and subtracting series: First, multiply by 2 and then subtract 8.

7.(1) Total quantity of petrol $= \left(\dfrac{4000}{7.50} + \dfrac{4000}{8} + \dfrac{4000}{8.50} \right)$ litres

consumed in 3 years $\quad 4000\left(\dfrac{2}{15} + \dfrac{1}{8} + \dfrac{2}{17} \right)$ liters

$$= \left(\frac{76700}{51} \right) \text{ litres}$$

Total amount spent = Rs. (3 x 4000) = Rs. 12000.

Average cost = $\left(\dfrac{12000 \times 51}{76700}\right) = $ Rs. $\dfrac{6120}{767} = $ Rs.7.98

8.(2)   Let C.P.= Rs. 100. Then, Profit = Rs. 320, S.P. = Rs. 420.

New C.P. = 125% of Rs. 100 = Rs. 125

New S.P. = Rs. 420.

Profit = Rs. (420 - 125) = Rs. 295.

Required percentage = $\left(\dfrac{295}{420} \times 100\right)_{\%} = \dfrac{1475}{21}\% = 70\%$ (approximately)

A student multiplied a number by $\dfrac{3}{5}$ instead of $\dfrac{5}{3}$

9.(4)   Each day of the week is repeated after 7 days.
So, after 63 days, it will be Friday. Hence after 63 days,
it will be Thursday.

Therefore, the required day is Thursday.

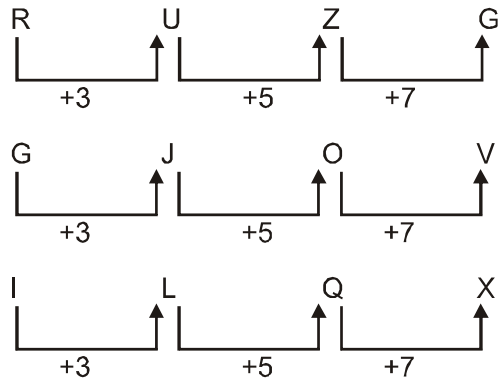**10 .(4)** $40\dfrac{4}{5}\min = 1\dfrac{51}{75}\text{hrs} = \dfrac{126}{75}\text{hrs.}$

Time taken = 1 hr 40 min 48 sec = 1 hr

Let the actual speed be x km/hr.

Then, $\dfrac{5}{7}x \times \dfrac{126}{75} = 42$

$x = \left(\dfrac{42 \times 7 \times 75}{5 \times 126}\right) = 35\text{km}/\text{hr.}$

11.(2) Given, Total profit = Rs. 990

13

Ration of their capitals = 34 : 65.

Now,   profit amount got by P = 20% of total profit + P's share in balance 80% profit for his capital

$$\left[0.2+0.8\times\frac{34}{34+65}\right] = 470$$

12.(2) Now area = (1/6 × 1000) sq m = 5000/3 sq m

2x × 3x = 5000/3 =>x × x = 2500 / 9

x = 50/3

length = 2x = 100/3 m and breadth = 3x = 3× (50/3) = 50m

13. (4) Distance = (240 x 5) = 1200 km.

Speed = Distance/Time

Speed = 1200/(5/3) km/hr.   [We can write 1 hours as 5/3 hours]

Required speed = 1200 x 3 km/hr = 720 km/hr.

14.(4) As,   2 × 5 × 1 = 20

and   4 × 3 × 6 = 72

Similarly,   7 × 2 × ? = 42

∴ $? = \dfrac{42}{14} = 3$

15.(1) According to question,

Therefore, B F J Q is odd.

16.(3) Let S be the sample space.

Then, n(S) = number of ways of drawing 3 balls out of 15

$$= {}^{15}C_3$$

$$= \frac{(15 \times 14 \times 13)}{(3 \times 2 \times 1)}$$

Let E = event of getting all the 3 red balls.

$$\therefore \quad n(E) = {}^{3}C_3 = {}^{5}C_2 = \frac{(5 \times 4)}{(2 \times 1)} = 10$$

$$\therefore \quad P(E) = \frac{n(E)}{n(S)} = \frac{10}{455} = \frac{2}{91}$$

17. (2) Instead of finding the probability of this event directly, we will find the probability of the non-occurrence of this event and subtract it from 1 to get the required probability.

Combination whose sum of 12 is (6,6)

Combinations whose sum of 11 is (5,6), (6,5).

15

Therefore, there are totally 3 occurrences out of 36 occurrences that satisfy the given condition.

Probability whose sum of two numbers is greater than or equal to 11 = $\dfrac{3}{36} = \dfrac{1}{12}$

Hence probability whose sum of two numbers is lesser than 11 = $1 - \dfrac{1}{12} = \dfrac{11}{12}$

18.(2) The sample space S is given by

S = {(H, T), (H, H), (T, H), (T, T)}

Let E be the event "two heads are obtained".

E = {(H, H)}

We use the formula of the classical probability.

$P(E) = \dfrac{n(E)}{n(S)} = \dfrac{1}{4}$

19.(4) Start at the top left and move in alternate boxes from left to right, then down one row and to the left, in a snakes and ladders pattern. Letters advance through the alphabet in steps of 2, 3, 4...8, before repeating this pattern.

20.(4) In each row, the numerical value of the central letter equals the difference between the sum of the numerical values of the two left hand letters and the sum of the numerical values of the two right hand letters.