

# Home Assignment

## for SSC & Railways Aspirants

1. **Direction:** Study the following table carefully and answer the questions given below.

Quantity of various dry fruits (in kg) sold by a shopkeeper during the six months of a year.

Food items	July	August	September	October	November	December
Almond	300	250	230	210	260	220
Peanut	350	380	370	365	350	360
Cashew	330	350	290	285	300	320
Raisin	340	310	300	255	230	245

What is the difference between the average quantity of Cashew sold in all the given months together and the average quantity of Raisin sold in all the given months together?

- A. 31.8 kg    B. 32.5 kg  
C. 41 kg    D. 16.45 kg  
E. None of these

Ans. B

Sol.

Sum of the quantity of Cashew sold from July to December is,

$$330+350+290+285+300+320 = 1875$$

$$\text{Average sold} = 1875/6$$

Sum of quantity of Raisin sold from July to December is,

$$340+310+300+255+230+245 = 1680$$

$$\text{Average sold} = 1680/6$$

Difference = Average selling of Cashew - average selling of Raisin

$$\frac{1875}{6} - \frac{1680}{6}$$

$$\text{Difference} = \frac{6}{6} - \frac{6}{6}$$

$$= 32.5 \text{ kg}$$

Hence correct option is (b).

2.The quantity of Peanuts sold in the month of November is approximately what percentage of the total quantity of dry fruits sold in the same month?

- A. 30.70%    B. 42.5%  
C. 33.65%    D. 28.75%  
E. None of these

Ans. A

Sol.

In the month of May, the amount of Peanut sold is = 350 kg

Total quantity of dry fruits sold in the month of November =

$$260+350+300+230= 1140 \text{ kg}$$

Required percentage

$$\frac{350}{1140} \times 100 \approx 30.70$$

Hence, option (a) is correct.

3.The difference between the total quantity of Almond and total quantity of Peanuts sold during the given months, is what percentage of total sale of Dry fruits in the month of December?

- A. 61.57%    B. 77.25%  
C. 60%    D. 55%  
E. None of these

Ans. A

Sol.

The Sum of quantity of Peanut sold in all the given months,

$$350+380+370+365+350+360 = 2175 \text{ kg}$$

The Sum of quantity of Almond sold in all the given months,

$$300+250+230+210+260+220= 1470 \text{ kg}$$

$$\text{Difference} = 2175 - 1470 = 705 \text{ kg}$$

Sale of Dry fruits in the month of

$$\text{December} = 220 + 360 + 320 + 245$$

$$\text{Sale of Dry fruits in December} = 1145 \text{ kg}$$

$$\frac{705}{1145} \times 100 = 61.57\%$$

$$\text{Percentage} = \frac{705}{1145} \times 100 = 61.57\%$$

Hence (a) is the correct option.

4.What is the average quantity of dry fruits per category per month sold from July to November together? (rounded off to two digits after decimal).

- A. 250 kg    B. 480 kg  
C. 323.75 kg    D. 302.75 kg  
E. None of these

Ans. D

Sol.

Sum of quantity of Almond sold from July to November

$$=300+250+230+210+260=1250 \text{ kg}$$

Sum of quantity of Peanut sold from July to November

$$= 350+380+370+365+350 = 1815 \text{ kg}$$

Sum of quantity of Cashew sold from July to November.

$$= 330+350+290+285+300 = 1555 \text{ kg}$$

Sum of quantity of Raisin sold from July to November

$$= 340+310+300+255+230 = 1435$$

Sum of quantity of all Dry fruits in all the given months from July to November

$$1250+1815+1555+1435 = 6055$$

$$\text{Average} = \frac{6055}{20} = 302.75 \text{ kg}$$

Hence (d) is the correct option.

5. What is the respective ratio of the total quantity of Dry fruits sold in the month of August to the total quantity of Dry fruits sold in the month of September?

- A. 230:2491 B. 129:119  
C. 22:19 D. 24:31  
E. None of these

Ans. B

Sol.

The total quantity of Dry Fruits sold in the month of August,

$$250+380+350+310 = 1290$$

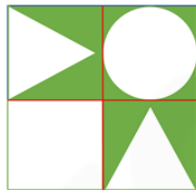
The total quantity of Dry fruits sold in the month of September,

$$230+370+290+300 = 1190$$

Ratio of sold quantity of dry fruit in August and September = 1290:1190  
1290/1190 = 129:119

Hence (b) is the correct option.

6. In the given figure a square of side length 14 cm is divided into four equal identical part. Two largest possible equilateral triangles are drawn within two part of the squares and a circle is drawn within third part of the square. What is the area of the shaded region?



A.  $\frac{1}{2} (31 - 7\sqrt{3}) \text{ cm}^2$

B.  $\frac{3}{2} (31 - 7\sqrt{3}) \text{ cm}^2$

C.  $\frac{5}{2} (31 - 7\sqrt{3}) \text{ cm}^2$

D.  $\frac{7}{2} (31 - 7\sqrt{3}) \text{ cm}^2$

Ans. D

Sol.

Area of larger

$$\text{square} = 14 \times 14 = 196 \text{ cm}^2$$

Area of smaller

$$\text{square} = 7 \times 7 = 49 \text{ cm}^2$$

Area of equilateral

$$\text{triangle} = \frac{\sqrt{3}}{4} \times 7^2 = \frac{49}{4} \sqrt{3} \text{ cm}^2$$

Area of the

$$\text{circle} = \frac{22}{7} \times \frac{7}{2} \times \frac{7}{2} = \frac{77}{2} \text{ cm}^2$$

Area of the shaded region

$$= 196 - \left( 49 + 2 \times \frac{49}{4} \sqrt{3} + \frac{77}{2} \right)$$

$$= 196 - 49 - \frac{49\sqrt{3} + 77}{2}$$

$$= \frac{294 - 49\sqrt{3} - 77}{2}$$

$$= \frac{7}{2} (31 - 7\sqrt{3}) \text{ cm}^2$$

7. If

$$(x^2 - 1)(x + 3)(x - 11)(x + 8)(x + 2) = c_0 + c_1x + c_2x^2 + \dots + c_6x^6,$$

then what is the value of  $c_5$ ?

- A. 1 B. 2  
C. -2 D. 3

Ans. B

Sol.

$$(x^2 - 1)(x + 3)(x - 11)(x + 8)(x + 2)$$

$$= (x - 1)(x + 1)(x + 3)(x - 11)(x + 8)(x + 2)$$

$\Rightarrow$  coefficient of  $x^6$  is 1

$$\Rightarrow c_6 = 1$$

Roots are 1, -1, -2, -3, -8, 11.

we know that (- sum of the roots) is the coefficient for  $x^5$

Sum of the roots

$$1 - 1 - 2 - 3 - 8 + 11 = -c_5/c_6 = -c_5$$

$$c_5 = 2$$

8. If  $\sin x - \tan^2 x = 1$ , then the

value of  $\sec^4 x + \operatorname{cosec} x$ ?

- A. 1 B. -1  
C. 2 D. 0

Ans. A

Sol.

$$\sin x - \tan^2 x = 1$$

$$\sin x = 1 + \tan^2 x$$

$$\sin x = \sec^2 x$$

Now,

$$\begin{aligned} & \sec^4 x + \operatorname{cosec} x \\ &= (\sec^2 x)^2 + \frac{1}{\sin x} \\ &= \sin^2 x + \frac{1}{\sec^2 x} \\ &= \sin^2 x + \cos^2 x \\ &= 1 \end{aligned}$$

9. In the following passage, some words have been deleted. Fill in the blanks with the help of the alternatives given. Select the most appropriate option for each blank.

Scientific management of the glacial rivers and lakes of the Himalayas is the (###Q1###) way to take care of the irrigation and drinking water needs of millions of people in the Gangetic plains. (###Q2###) milk and dumping bodies would not bring purity to any river. Some religious persons have expressed (###Q3###) that the Gangotri glacier is receding, and Ma Ganga would disappear like the ancient river Saraswati. In the Harappan Age of the river Saraswati, geological faults were not known. Today, with the (###Q4###) in science, we are in a position to know about the natural changes likely to occur in the future. Geological and hydrological knowledge makes it possible to manage the (###Q5###) of natural resources. We cannot control natural forces but we can plan and prepare for their better management.

rivers and lakes of the Himalayas is the \_\_\_\_\_ way to take care

- A. some      B. no
- C. only      D. many

Ans. C

Sol. Author, in the first line of the above paragraph, gives the solution to protect glacial rivers and lakes of the Himalayas and he thinks it is the only way to do so. So, in the context of the above paragraph, the word "only" is the correct fit.

10. \_\_\_\_\_ milk and dumping bodies would not

- A. dumping      B. pouring
- C. spilling      D. discharging

Ans. B

Sol. Causing milk to flow from a container in a steady stream is called 'Pouring of milk'. Therefore, in the context of the above sentence, the word 'pouring' is the correct fit for the given blank.

11. Some religious persons have expressed \_\_\_\_\_ that

- A. view      B. concern
- C. threat      D. chance

Ans. B

Sol. Above paragraph gives a sense of worriedness about the deteriorating condition of Gangotri glacier. So, the word which correctly fit for the given blank is 'Concern'. Words 'view' (which means look at or inspect), Threat (which means a statement of an intention to inflict pain, injury, damage, or other hostile action ) and Chance (which means possibility) do not impart correct sense to the above sentence.

12. Today, with the \_\_\_\_\_ in science

- A. reformation      B. encouragement
- C. growth      D. advancement

Ans. D

Sol. The word 'advancement', which means a development or improvement from the earlier situation, is the correct fit for the given blank. The words given in other options like, Reformation (which means to reconstruct), Encouragement (which means to give someone support, confidence, or hope) or Growth (which means increase in size or something), do not impart correct sense to the sentence.

13. makes it possible to manage the \_\_\_\_\_ of natural resources

- A. sustainability      B. stability
- C. security      D. durability

Ans. A

Sol. From the second last line of the above paragraph the author wants to say that with the help of Geological and hydrological knowledge we can make judicious use of available natural

resources and also can protect and preserve it for the upcoming generations. So, the word 'Sustainability', which means the same, is the correct fit for the given blank.

14. In the following passage, some words have been deleted. Fill in the blanks with the help of the alternatives given. Select the most appropriate option for each blank.

There has been a sharp (###Q1###) in the population of vultures in the country which has come down from 40 million to 19,000 in a (###Q2###) of over three decades, the Environment Ministry told the Parliament on Friday. The crash in population was first (###Q3###) in the mid-90s and by 2007, there was a 99% decline in the population of the vultures. The Minister said nationwide vulture surveys are being (###Q4###) out by the Bombay Natural History Society (BNHS) every four years sponsored by the Ministry of Environment and Forest Departments of various States (###Q5###) 1990. Based on the latest survey carried out in 2015 and the results published in 2017, there were about 6,000 White-backed vultures, 12,000 Long-billed vultures and 1,000 Slender-billed vultures.

There has been a sharp \_\_\_\_\_ in

- A. rise
- B. decline
- C. diminish
- D. lowering

Ans. B

Sol. 'Decline' is the correct fit for the given blank, as it means a gradual and continuous loss of strength, numbers, quality, or value. Above paragraph discusses the cause of drastic downfall in the number of vultures so the word 'Rise' cannot be used for the given blank. In the context of the above sentence the word 'Diminish' or 'Lowering' also do not fit correctly for this particular blank.

15. come down from 40 million to 19,000 in a \_\_\_\_\_ of over three decades,

- A. length
- B. stretch
- C. span
- D. difference

Ans. C

Sol. 'Span', which means 'the length of time for which something lasts', is the most correct fit among the available options for the given blank. Other options like, Length (the amount of time occupied by something), Stretch (which means extend or spread over an area or period of time) or Difference (which means remainder) are not as suitable to use here as the word 'Span'.

16. The crash in population was first \_\_\_\_\_ in the mid-90s

- A. noticed
- B. invented
- C. got
- D. confirm

Ans. A

Sol. From this particular line the author wants to say that, the reduction in the population was first observed or detected in the mid-90s. So, in the context of this particular line, the correct fit for the blank is 'Noticed'.

17. nationwide vulture surveys are being \_\_\_\_\_ out

- A. let
- B. carried
- C. conveyed
- D. taken

Ans. B

Sol. Surveys are always being 'carried out' or 'conducted out' and not 'let out or taken out'. 'Conveyed' means 'to pass the message from one person to other'. So, the correct fit for the given blank is 'Carried'.

18. Environment and Forest Departments of various States \_\_\_\_\_ 1990.

- A. for
- B. since
- C. from
- D. about

Ans. B

Sol. 'For' is used to denote period of time so it cannot be used here. 'From' usually refers to a finished action or an action that is in the future but here, the action discussed is not yet finished, so use of the word 'From' is incorrect. 'About' shows uncertainty so its use is also incorrect. 'Since' denotes point of time so it is the correct fit for the given blank.

19. The World Photography Day (WPD) is observed every year on \_\_\_\_\_.

- A. 20th August      B. 19th August  
C. 11th August      D. 15th August  
E. None of these

Ans. B

Sol. World Photography Day is observed every year on 19<sup>th</sup> August to inspire photographers across the planet to share a single photo with the world. On this day, camera persons take stock of the different kind of photography that has come to the fore.

20. To boost the chemical industry India's first Central Institute of Chemical Engineering & Technology (CICET) will be set up in which state?

- A. Maharashtra      B. Karnataka  
C. Gujarat      D. Delhi  
E. Haryana

Ans. C

Sol.

- According to Union Minister of State for Chemical & Fertilizers Mansukh Mandaviya, India's first Central Institute of Chemical Engineering & Technology (CICET) will be set up in Gujarat to give boost to the chemical industry.

- The CICET will come up either at Ahmedabad or Surat.

- The Minister of State for Chemical and Fertilisers also announced setting up of another campus of the Central Institute of Plastic Engineering & Technology (CIPET) in Valsad at the cost of Rs 54 crore for the benefit of tribal students and the plastic industry.

- The Central government is also planning to set up a Plastic Waste Management Centre in Ahmedabad to find out solutions to systematic segregation and recycling of plastic waste.

21. Which of the following cities hosted the international conference on teacher education?

- A. New Delhi      B. Ranchi  
C. Patna      D. Pune  
E. Bhopal

Ans. A

Sol.

Union Human Resource Development Minister Ramesh Pokhriyal 'Nishank' has

inaugurated an international conference on teacher education in New Delhi. The two-day event is being organized by the National Council of Teacher Education as part of silver jubilee celebration of its establishment in 1995.

22. Who among the following has been appointed as the MD and CEO of Vodafone Idea?

- A. K Thangaraj      B. Madhur Bhatia  
C. Ravinder Takkar      D. Ankita Gulati  
E. Balesh Sharma

Ans. C

Sol.

- Ravinder Takkar has been appointed as the MD and CEO of Idea-Vodafone with immediate effect.

- He has replaced Balesh Sharma after his resignation as the chief executive officer of Vodafone Idea (VIL).

- Currently, Mr Takkar is a board member of Vodafone Idea and Indus Towers, where he is responsible for all Vodafone Group interests in India.

23. Which of the following states has announced to establish 'Lemru Elephant Reserve'?

- A. Manipur      B. Odisha  
C. Chhattisgarh      D. Haryana  
E. Punjab

Ans. C

Sol.

Chhattisgarh Chief Minister Bhupesh Baghel has announced to set up 'Lemru Elephant Reserve' to provide permanent habitat for the wild elephants in the state.

24. What is the theme of World Humanitarian Day 2019?

- A. NotATarget  
B. Women Humanitarians  
C. We are Humanitarian Workers  
D. People Helping People  
E. I Was Here

Ans. B

Sol.

The theme of world humanitarian day 2019 was 'Women Humanitarians'.

The day is observed annually to pay tribute to the humanitarian aid workers who endanger their lives for

humanitarian service as well as to rally support for the people affected by crisis across the world.

25. Who received 2019 Maharshi Badrayan Vyas Samman in Sanskrit?

- A. SujataTripathi
- B. Anoma Shriram Sakhare
- C. Santhosh Thottingal
- D. Chand KiranSaluja
- E. None of the above

Ans. A  
Sol.

- President of India Ramnath Kovind awarded Maharshi Badrayan Vyas Samman to various scholars of Sanskrit, Persian, Arabic, Pali, Prakrit, Classical Kannada, Classical Telugu, Classical Malayalam and Classical Odiya for year 2019.
- Prof. SujataTripathi received the award for his contribution in Sanskrit.

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