

Home Assignment

for SSC & Railways Aspirants



1. Who is director of a movie based on PM Modi?

- A. Neeraj Pandey
- B. Omung Kumar
- C. Shoojit Sircar
- D. Vishal Bhardwaj
- E. 2017

Ans. B

Sol.

- PM Narendra Modi is a 2019 Indian Hindi-language biographical film written by Anirudh Chawla and Vivek Oberoi and directed by Omung Kumar.
- The film stars Vivek Oberoi as Narendra Modi, the Prime Minister of India; starring Vivek Oberoi in the lead role who is also credited as co-writer of the film.

2. Which was the first country to host the Asian Games?

- A. Korea
- B. India
- C. Japan
- D. China

Ans. B

Sol. The Asian Games, also known as Asiad, is a Pancontinental multi-sport event held every four years among athletes from all over Asia. The Games were regulated by the Asian Games Federation from the first Games in New Delhi, India, until the 1978 Games. Since the 1982 Games they have been organized by the Olympic Council of Asia after the breakup of the Asian Games Federation.

3. Who released a book titled 'Vivekadeepini'?

- A. Narendra Modi
- B. Nirmala Sitaraman
- C. M. Venkaiah Naidu
- D. Ram Nath Kovind

Ans. C

Sol. • Vice President of India, **Shri M. Venkaiah Naidu** released a book titled 'Vivekadeepini'.

• This short book is a summary of Prashnottara Ratnamalika written by **Adi Shankaracharya**.

• It is a compilation of select 36 verses drawn from 67 verses of Prashnottara Ratnamalika which are written in Question-Answer format.

4. Who was Chief of General Staff of the Indian Army during Indo- China war?

- A. Brij Mohan Kaul
- B. K. S. Thimayya
- C. K. M. Cariappa
- D. Sam Manekshaw

Ans. A

Sol. • **Brij Mohan Kaul** was the Chief of General Staff of the Indian Army during the **Indo-China war 1962**.

- He resigned in the aftermath of the 1962 Sino-Indian War.
- He was awarded the Param Vishisht Seva Medal in 1960.
- India was attacked on October 20th, 1962 in what famously came to be known as Sino-India war (Indo-China war) of 1962.

5. Which sportsperson received the 2018 Rajiv Gandhi Khel Ratna award?

- A. P.V. Sindhu
- B. Bajrang Punia
- C. Virat Kohli
- D. Jitu Rai

Ans. C

Sol. • **Indian cricket captain Virat Kohli received the 2018 Rajiv Gandhi Khel Ratna award** along with weightlifter Saikhom Mirabai Chanu. Chanu is the first Indian to win gold at the World Championships in more than two decades.

- The Rajiv Gandhi Khel Ratna is the highest sporting honour in India. It is named after Rajiv Gandhi, former Prime minister, who served from 1984-1989.
- It was instituted in 1991-92 and the first recipient of this award was chess grandmaster Vishwanathan Anand.

6. If $p^{\frac{1}{3}} + q^{\frac{1}{3}} - r^{\frac{1}{3}} = 0$, then $(p + q - r)^3 + 27pqr$ is equal to:

- A. 0
- B. -27
- C. -1
- D. 27

Ans. A

Sol. $p^{\frac{1}{3}} + q^{\frac{1}{3}} - r^{\frac{1}{3}} = 0$

$$p^{\frac{1}{3}} + q^{\frac{1}{3}} = r^{\frac{1}{3}}$$

Cubing both sides, we get

$$p + q + 3p^{\frac{1}{3}}q^{\frac{1}{3}}\left(p^{\frac{1}{3}} + q^{\frac{1}{3}}\right) = r$$

$$p + q - r = -3p^{\frac{1}{3}}q^{\frac{1}{3}}\left(p^{\frac{1}{3}} + q^{\frac{1}{3}}\right)$$

$$p + q - r = -3p^{\frac{1}{3}}q^{\frac{1}{3}}r^{\frac{1}{3}}$$

Again, cubing both sides, we get

$$(p + q - r)^3 = -27pqr$$

$$(p + q - r)^3 + 27pqr = 0$$

Alternate method:

We know that, if $a+b+c = 0$ then

$$a^3 + b^3 + c^3 = 3abc$$

Here, in this question take $a = p^{1/3}$, $b = q^{1/3}$, $c = -r^{1/3}$

So,

$$p + q - r = -3(pqr)^{1/3}$$

taking cube on both sides we get

$$(p + q - r)^3 = -27pqr$$

$$(p + q - r)^3 + 27pqr = 0$$

7. If $a + b = 10$ and $ab = 24$, then the value of $a^3 + b^3$ is

- A. 280
- B. 370
- C. 520
- D. 730

Ans. A

Sol. Given $a+b = 10$; $ab = 24$

$$(a+b)^2 = a^2+2ab+b^2$$

$$\Rightarrow 100 = a^2 + 2(24) + b^2$$

$$\Rightarrow a^2+b^2 = 52.....(1)$$

$$a^3+b^3 = (a+b)(a^2+b^2 -ab)$$

$$= 10(52-24) \text{ from eq 1.}$$

$$= 280$$

8. If a boat goes a certain distance at 30 km/h and comes back the same distance at 20 km/hr, what is the average speed (in km/hr) for the total journey?

- A. 25
- B. 24.5
- C. 24
- D. 25.5

Ans. C

Sol. let the distance be 60 km

$$\frac{2 \times 60}{\frac{60}{30} + \frac{60}{20}}$$

$$\text{Average speed} =$$

$$= 120/5$$

$$= 24 \text{ km/hr}$$

9. The average age of 120 members of a society is 60.7 years. By addition of 30

new members, the average age becomes 56.3 years. What is the average age (in years) of newly joined members?

- A. 36.5
- B. 37.2
- C. 38.3
- D. 38.7

Ans. D

Sol. Given: Average age of 120 members of a society is 60.7 years and by addition of 30 new members, the average age becomes 56.3 years.

Let the average age of the new members be x years, then according to the question

$$\frac{120 \times 60.7 + 30 \times x}{120 + 30} = 56.3$$

$$\Rightarrow 7284 + 30x = 8445$$

$$\Rightarrow 30x = 1161$$

$$\Rightarrow x = 38.7 \text{ years}$$

10. What will be the amount on 25000 in 2 years at annual compound interest, if the rates for the successive years are 4% and 5% per annum respectively?

- A. 26800
- B. 28500
- C. 27300
- D. 30000

Ans. C

Sol.

$$A = P \left(1 + \frac{r_1}{100}\right) \left(1 + \frac{r_2}{100}\right)$$

$$A = 25000 \left(1 + \frac{4}{100}\right) \left(1 + \frac{5}{100}\right)$$

$$A = 25000 \times \frac{26}{25} \times \frac{21}{20}$$

$$A = 25000 \times \frac{26}{25} \times \frac{21}{20}$$

$$A = 50 \times 26 \times 21$$

$$A = 27300$$

11. Ram, Shyam and Mohan started a business by investing Rs7200, Rs10080 and Rs11520 respectively. Find the share of Ram out of an annual profit of Rs4000?

- A. 1000
- B. 2500
- C. 1500
- D. 1600

Ans. A

Sol. Ram Shyam Mohan

$$7200 : 10080 : 11520$$

$$5 : 7 : 8 = 20$$

$$\text{Ram's share} = \frac{4000}{20} \times 5 = \text{Rs}1000$$

12. A cuboidal tank has capacity to hold 343 liters of water. Its length is 3 times its depth, and width is half of one-third of the difference between length and depth. What is the length of the tank?

- A. 70 cm B. 140 cm
C. 210 cm D. 280 cm

Ans. C

Sol. Let the depth of tank is x cm, then length is $3x$ cm, and width is

$$= \frac{1}{2} \times \frac{1}{3} (3x - x) = \frac{x}{3}$$

Volume

$$= x \times 3x \times \frac{x}{3} = 343 \times 1000 \text{ cm}^3$$

$$x^3 = 343000$$

$$x = 70 \text{ cm}$$

Length of the tank

$$= 3x = 210 \text{ cm}$$

13. A metallic sphere whose diameter is 3 cm is melted and formed a wire of radius 0.1 cm. What is the length of wire?

- A. 45 centimeters
B. 4.5 meters
C. 4.2 meters
D. 420 centimeters

Ans. B

Sol.

Let the length of wire is l cm, then

Volume of sphere = Volume of wire

$$\frac{4}{3} \pi r_1^3 = \pi r_2^2 l$$

$$\frac{4}{3} \times \left(\frac{3}{2}\right)^3 = (0.1)^2 \times l$$

$$l = \frac{9}{2} \times 100 = 450 \text{ cm} = 4.5 \text{ m}$$

14. Curved surface area of a cylinder is 660 sq cm. If circumference of its base is 44 cm, find the volume of the cylinder?

- A. 4620 cubic cm B. 2310 cubic cm
C. 6930 cubic cm D. 1155 cubic cm

Ans. B

Sol. CSA of cylinder = 660 sq cm

Circumference = $2\pi r = 44$ cm ; $r =$

$$44/2\pi$$

Volume of cylinder ?

$$\text{CSA} = 660$$

$$\Rightarrow 2\pi r h = 660$$

$$\Rightarrow 44 h = 660$$

$$\Rightarrow h = 15 \text{ cm} = \text{height of cylinder}$$

$$\text{volume} = \pi r^2 h = \pi \times \frac{44}{2\pi} \times \frac{44}{2\pi} \times 15$$

$$= \frac{22 \times 22 \times 7 \times 15}{22}$$

$$= 2310 \text{ cubic m}$$

15. If the price of a commodity is increased by $33\frac{1}{3}\%$ then by what percent, the family should reduce its consumption so that the expenditure of the family does not change.

- A. 20% B. 23%
C. 26% D. 25%

Ans. D

Sol. Let the price of commodity is x Rs/kg and the family purchase y kg of commodity.

$$\text{New price of commodity} = x + 33\frac{1}{3}\% * x$$

$$x$$

$$= x + x/3 = 4x/3 \text{ Rs/kg}$$

Let the family purchase p kg after the changes in the price.

So, expenditure remain same

$$x*y = 4x/3 * p$$

$$p = 3y / 4$$

Change in commodity demand = y

$$- 3y/4 = y/4$$

Percent change in commodity demand

$$= \frac{y}{y} * 100 = 25\%$$

Direct formula:

$$[R/(R+100)]*100$$

$$\text{Where } R = 33\frac{1}{3} \%$$

16. Population of a town increases by 12% every year. If the population of town will be 188160 after 2 years, then what is its present population?

- A. 150000 B. 160000
C. 155000 D. 165000

Ans. A

Sol. Let the present population be x
There is 12% increase every year
Then

$$x \times \frac{112}{100} \times \frac{112}{100} = 188160$$

$$X = 150000$$

17. A man sold a scooter and a home theater for Rs. 24000 each. He gained 20% on home theater but lost 20% scooter. Find his net gain or net loss.

- A. 2% gain B. 2% loss
C. 4% loss D. 4% gain

Ans. C

Sol. Since, the selling price of both items are same and profit and loss percent are also same, there is a loss of

$$\text{Loss \%} = \frac{(P \text{ or } L\%)^2}{100} = \frac{400}{100} = 4\%$$

18. The marked price of a helmet is 30% more than its cost price. If the helmet is sold for Rs 744 after a discount of Rs 36, then what will be the profit percentage?

- A. 24 B. 18
C. 21 D. 27

Ans. A

Sol. Given SP of helmet = 744

Discount = 36

Marked Price = 780

MP is 30% more than CP

So, MP = 130% of CP

780 = 130% of CP

$$CP = \frac{780}{130} \times 100$$

CP = 600

SP = 744

Profit = 744 - 600 = 144

$$\text{Profit\%} = \frac{\text{Profit}}{CP} \times 100$$

$$= \frac{144}{600} \times 100$$

$$= 24\%$$

Hence, option A is the correct option

19. A man riding his bike at speed 72 km/h found a car 48 meters ahead of him. After 10 second the car is 52 meters

behind the bike. What was the speed of the car?

- A. 48 km/h B. 50 km/h
C. 36 km/h D. 68 km/h

Ans. C

Sol. Let speed of car = v km/h

Relative speed = (72 - v) km/h

Distance travelled in 10

seconds = 48 + 52 = 100 meters

$$(72 - v) \times \frac{10}{3600} = \frac{100}{1000}$$

$$(72 - v) = 36$$

$$v = 72 - 36 = 36$$

20. A cart can cover a distance in 1 hr 25 min by covering 2/3rd of the total distance at 4 km/h and rest at 3 km/h. What was the total distance?

- A. 6.3 km B. 5.1 km
C. 4.7 km D. 7 km

Ans. B

Sol. Let the distance was = D km

$$D \left(\frac{2}{3} + \frac{1}{3} \right) = 1 + \frac{25}{60}$$

$$D \left(\frac{1}{6} + \frac{1}{9} \right) = \frac{17}{12}$$

$$D \times \frac{5}{18} = \frac{17}{12}$$

$$D = \frac{17}{12} \times \frac{18}{5} = \frac{51}{10} = 5.1 \text{ km}$$

21. A is taller than B but shorter than C. B is as tall as D but taller than E, who is the tallest?

- A. C B. A
C. B D. D

Ans. A

Sol. C > A > B

B = D

B > E

So, according to all equations,

C is the tallest.

22. In a certain code if 'M' denotes '÷', 'N' denotes 'X', 'O' denotes '+' and 'P'

denotes '-', then what will be the value of 3 N 30 M 3 N 5 M 15 O 2 P 16 O 7?

- A. 1
- B. 2
- C. 3
- D. 4

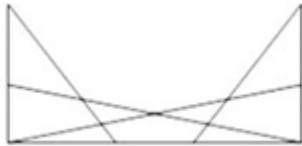
Ans. C

Sol. 3N30M3N5M15O2P16O7

After changing the signs,
 $= 3 \times (30 \div 3) \times (5 \div 15) + 2 - 16 + 7$
 $= 10 + 2 - 16 + 7$
 $= 19 - 16$
 $= 3$

Hence, option C is the correct answer.

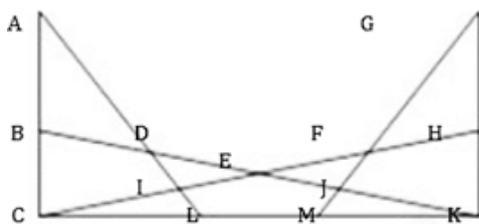
23. How many triangles are there in the given figure?



- A. 14
- B. 15
- C. 17
- D. 18

Ans. C

Sol.



ACL, ABD, BEC, CIL, BCK, CIA, DIE, DLK, CEK, GKM, GHF, HKC, JMK, JEF, HKE, GJK, FMC 17

Hence, the correct option is C.

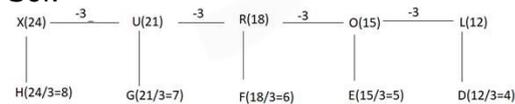
24. A series is given with one term missing. Select the correct alternative from the given ones that will complete the series.

XH, UG, RF, OE, ?

- A. PL
- B. TG
- C. UK
- D. LD

Ans. D

Sol.



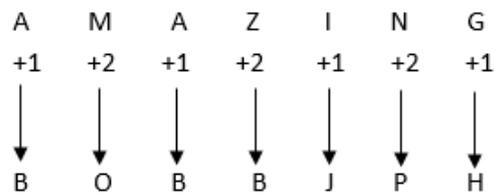
Hence, the correct answer is D.

25. If is AMAZING coded as BOBBJPH, then how will GOLD be coded as?

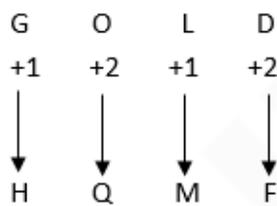
- A. HPME
- B. IQOE
- C. HQMF
- D. IPNF

Ans. C

Sol. As,



Similarly,



Thus GOLD is coded as HQMF.

26. In the following question, a set of labelled sentences is given. Out of the four alternatives, select the most logical order of the sentences to form a coherent paragraph.

1). There is nothing strange in the fact that so many foreign students should wish to learn English.

P. If any valuable book is written in another language, an English translation of it is sure to be speedily published.

Q. Anyone who masters the English tongue acquires a key.

R. Most books found to be generally useful are written in English.

S. The English speaking want no monopoly of knowledge.

6). This key will open to him whatever is valuable in the literature of the world.

A. PSQR

B. SQRP

C. RPSQ

D. PQSR

Ans. C

Sol. Sentence Q talks about acquiring a key by mastering the English tongue. It is well preceded by sentence 6 as it also refers to the key mentioned in sentence Q. There is only one sequence ending with Q which is RPSQ, so it is the correct answer.

27. Improve the bracketed part of the sentence.

(After he arrived) from office, he goes to gym.

- A. After he had being arriving
- B. After he had arrived
- C. After he arrives
- D. No improvement

Ans. C

Sol. The latter part of the sentence talks about what the person does after the former part is over. Since the latter part is in simple present tense, the former part should also be in the same tense. Hence, option C is the correct answer.

28. In the following question, out of the five alternatives, select the word similar in meaning to the given word.

Precedent

- A. Contingent
- B. Anterior
- C. Arbitrary
- D. Fortuitous

Ans. B

Sol. Contingent = subject to chance; a group of people representing an organization or country, or a part of a military force

Arbitrary = based on random choice or personal whim, rather than any reason or system

Fortuitous = happening by chance rather than intention

Anterior = coming before in time; earlier
Hence option B is the correct answer.

29. In the following question, out of the four alternatives, select the alternative

which best expresses the meaning of the Idiom/Phrase.

A dickens of a job

- A. An effortless task
- B. A back breaking task
- C. Someone else's work forced on someone else
- D. An insignificant task

Ans. B

Sol. 'A dickens of a job' means a very difficult job. Corresponding to it, 'a back breaking task' is the most suitable response. Back breaking means needing a lot of hard, physical effort and making you feel extremely tired.

30. In the following question, out of the four alternatives, select the alternative which is the best substitute for the phrase.

Not being what it purports to be

- A. Legitimate
- B. Palpable
- C. Evident
- D. Spurious

Ans. D

Sol. Legitimate means conforming to the law or to rules.

Palpable means able to be touched or felt.

Evident means clearly seen or understood.

Spurious means not being what it purports to be.

Therefore option D is the correct answer.

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