SSC & Railway Exams Home Assignment

Answer Key

1. Mintaka Pass connects which of the following?
A. Kashmir to China
B. Kashmir to Uttrakhand
C. Uttrakhand to China
D. Sikkim to China

Ans. A
Sol.
• **Mintaka Pass connects Kashmir to China**.
• It is located in the tri junction of Kashmir-Afghanistan-China in Karakorum Mountains.
• Mintaka word means '**A thousand goats'**.**Kilik Pass** is located nearby Mintaka Pass.

2. Who won the men's 10 metres air pistol gold at the 63rd National Shooting Championship in Bhopal?
A. Abhinav Bindra
B. Saurabh Chaudhary
C. Abhishek Verma
D. Sarabjot Singh

Ans. B
Sol.
* **Saurabh Chaudhary** has won the men's 10 metres air pistol gold at the 63rd National Shooting Championship in Bhopal on 4 January 2020.
* The 63rd National Shooting Championship Competitions (NSCC) 2019 was held at **Shooting Academy Shooting Ranges, Bhopal, Madhya Pradesh (MP) from 7th December 2019 – 4th January 2020**.
* It was jointly organized and conducted by the National Rifle Association of India(NRAI) & MP State Shooting Academy.

3. Doppler Effect is related to _____.
A. Planets revolution
B. Reflection of wave
C. Motion of source and observer of waves
D. Frictional Force heat generation

Ans. C
Sol.
• **The Doppler Effect is related change in frequency of a wave due to moving observer or source of wave.**
• In simple terms, it is a noticeable change in the frequency of sound, light or water waves as the source and the observer move.

4. Which of the following body cavity is generally lined by mesoderm?
A. Pseudocoelomate
B. Segmentation
C. Coelom
D. None of above

Ans. C

Sol.
The body cavity, which is lined by Mesoderm is called Coelom.
• Coelom is the main body cavity present in animals.
• A coelom can absorb shock & also support immune system.
In some organisms, the internal organs lies within a body cavity that is incompletely lined with mesoderm, they are called **Pseudocoelomates.**

5. Water is an example of which type of magnetic material?
A. Diamagnetic
B. Paramagnetic
C. Ferromagnetic
D. All of above

Ans. A
Sol.
• **Water is a Diamagnetic substance.**
• Diamagnetic substances are those materials which when placed in a magnetic field, acquires feeble magnetism opposite to direction of magnetic field.
• For eg. Bismuth, water, Mercury etc.
Other options:
• *Paramagnetic substances* are those materials which when placed in a magnetic field, acquire feeble magnetism same to direction of magnetic field.
• *Ferromagnetic substances* are those materials which when placed in a magnetic field; acquire feeble magnetism opposite to direction of magnetic field.

6. A, B and C start a business. A invests $33\frac{1}{3}\%$ of the total capital, B invests 25% of the remaining and C invests the rest. If the total profit at the end of a year is ` 1,62,000, then A's share in profit is :
A. ` 54,000          B. ` 60,000
C. ` 81,000          D. ` 90,000

Ans. A
Sol.
Let the total capital = $6x$
A.T.Q.
A invests $33\frac{1}{3}\%$ of total capital = $6x \times \frac{1}{3} = 2x$
B invests 25% of remaining = $4x \times \frac{25}{100} = 1x$
C invests the remaining = $3x$
Total profit = $(A + B + C) = 162000$
$6x = 162000$
$x = 27000$
A's share in profit = $2x = 2 \times 27000$
$= ₹54000$

7. The HCF of two numbers is 21 and their LCM is 221 times the HCF. If one of the numbers lies between 200 and 300, then the sum of the digits of the other number is :
A. 14
B. 18
C. 17
D. 15

Ans. D
Sol.
Let two no. are a and b.
HCF. = 21

Then, $a = 21x, b = 21y$ ($x \& y$ are co-prime)
A.T.Q.
$a \times b = 21x \times 21y = 221 \times 21$
$\Rightarrow 21(x \times y) = 221 \times 21$
$\Rightarrow (x \times y) = 221 = 17 \times 13$
$x = 17, y = 13$
$a = 21 \times 17 = 357$
$b = 21 \times 13 = 273$
A.T.Q. $\Rightarrow a = 357$
Sum of digits = 3 + 5 + 7 = 15

8. If 3sinθ=2cosθ, then $\dfrac{4\sin\theta - \cos\theta}{4\cos\theta + \sin\theta}$ is equal to:

A. $\dfrac{5}{7}$

B. $\dfrac{5}{14}$

C. $\dfrac{5}{8}$

D. $\dfrac{5}{11}$

Ans. B
Sol.
Given that,
3sinθ=2cosθ
$\dfrac{sin\theta}{cos\theta} = \dfrac{2}{3}$
$tan\theta = 2/3$
We have to find
$\dfrac{4\sin\theta - \cos\theta}{4\cos\theta + \sin\theta}$

$\dfrac{4tan\theta - 1}{4 + tan\theta} = \dfrac{4 \times \frac{2}{3} - 1}{4 + \frac{2}{3}} = 5/14$

9. 2% of 73.33% of 0.00833% of 9/11 of x³/16 is equal to 27(3√3-5). find x?

A. $600(\sqrt{3} - 1)$

B. $1200(\sqrt{3} - 1)$

C. $900(\sqrt{3} - 1)$

D. $600(\sqrt{3} - \sqrt{2})$

Ans. A
Sol.
$\dfrac{2}{100} * \dfrac{73.33}{100} * \dfrac{0.00833}{100} * \dfrac{9}{11} * \dfrac{x^3}{16} = 27(3\sqrt{3} - 5)$

$x^3 = 27(3\sqrt{3} - 5) * 50 * \dfrac{15}{11} * 12000 * \dfrac{11}{9} * 16$

$x^3 = 3(3\sqrt{3} - 5) * 50 * 15 * 12000 * 16$

$x = \sqrt[3]{3(3\sqrt{3} - 5) * 50 * 15 * 12000 * 16}$

$x = 5 * 10 * 4 * 3 * \sqrt[3]{6\sqrt{3} - 10} = 600(\sqrt{3} - 1)$

10. A cylindrical drum whose base is horizontal and having an internal radius of 6 cm contains sufficient water so that when a solid spherical ball is placed inside it, water just covers the spherical ball. Spherical ball fits in the cylindrical drum exactly. The depth of water in the cylindrical drum before the spherical ball was put, is
A. 2 cm
B. 3cm
C. 4 cm
D. 5 cm

Ans. C
Sol.
In the cylinder of radius 6 cm, the sphere just fits. So, radius of spherical ball is 6cm.
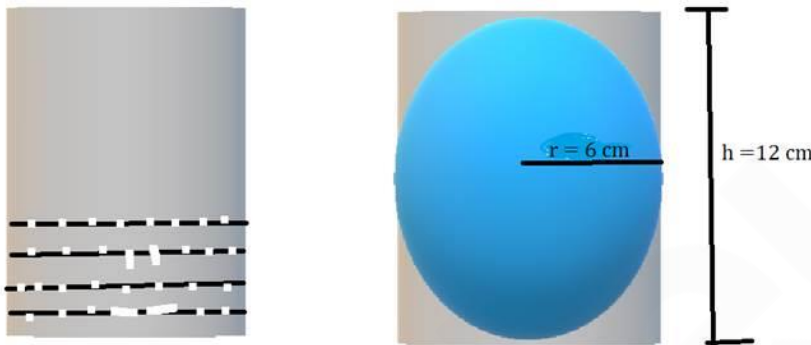
Let, If spherical ball is put in the cylindrical drum, it raises water level by h'
So, volume of water raised in cylindrical drum = volume of sphere
So $\pi r^2 h' = \frac{4}{3}\pi \times r^3$
$\Rightarrow h' = \frac{4}{3} \times r = \frac{4}{3} \times 6 = 8$
So, The depth of water in the cylindrical drum before the spherical ball was put = 12-8 = 4cm

11. Select the missing number from the given options.

28	33	183
14	23	111
31	?	219

A. 40
B. 42
C. 30
D. 32

Ans. B
Sol.
Logic-
Row 1:
(28+33)*3=61*3=183
Row 2:
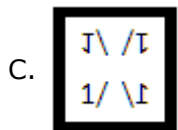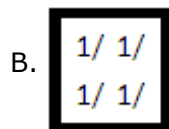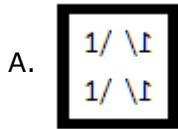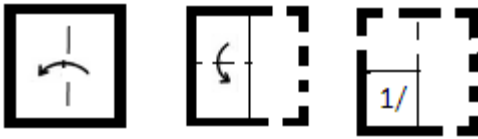(14+23)*3=37*3=111
Row 3:

(31+42)*3=73*3=219
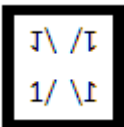Hence, the correct answer is option B.

12. A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened?

A.

B.

C.

D.
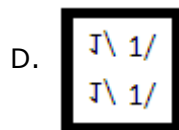
Ans. C
Sol.
As it is punched in a book-folding manner and then again it gets punched. So, when we open it up there will be figure as shown in option(c).

Hence option(c) is correct.

13. Select the combination of letters that when sequentially placed in the gaps of the given
cab_cca_ccc_bcccab_cc_bcc
A. cbbbb
B. cbaca
C. cbcca
D. acaca

Ans. B
Sol.
Logic- cabcc is repeated 5 times.
cabcc / cabcc / cabcc / cabcc / cabcc
Hence, the correct answer is option B.

14. If NDTV is coded as 4404 and ABP is coded as 126, then how will NEWS be coded as?
A. 1245   B. 4565
C. 4569   D. 1569

Ans. C
Sol.
As,
NDTV= N(14)D(4)T(20)V(22)
= N(1*4)D(4)T(2*0)V(2*2)

= N(4)D(4)T(0)V(4)
=4404
And
ABP= A(1)B(2)P(16)
= A(1)B(2)P(1*6)
= A(1)B(2)P(6)
=126
Similarly,
NEWS= N(14)E(5)W(23)S(19)
= N(1*4)E(5)W(2*3)S(1*9)
= N(4)E(5)W(6)S(9)
=4569
Hence, the correct answer is option C.

15. Select the set in which the numbers are related in the same way as are the numbers of the following set.
(5, 14, 14)
A. (7, 38, 232)   B. (13, 43, 43)
C. (6, 36, 36)   D. (3, 21, 57)

Ans. A
Sol.
As, $5^2-11=25-11=14$, $5^3-111=125-111=14$
Similarly,
$7^2-11=49-11=38$, $7^3-111=343-111=232$
Hence, the correct answer is option A.

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