

Most Expected Questions for SSC CGL 2019-20 Tier-II Exam



1. $(5a + 4b - 6c)^2$ का विस्तार करें:

- A. $25a^2 + 16b^2 + 36c^2 + 40ab - 48bc + 60ca$
- B. $25a^2 + 16b^2 + 36c^2 + 40ab - 48bc - 60ca$
- C. $25a^2 + 16b^2 - 36c^2 + 40ab - 48bc - 60ca$
- D. $25a^2 + 16b^2 + 36c^2 + 40ab + 48bc + 60ca$

2. मान लीजिये बहुपद $p(x) = x^4 - 8x^3 - px^2 + qx + 16$ के धनात्मक वास्तविक मूल हैं। pq का मान ज्ञात करें:

- A. -768
- B. 848
- C. 768
- D. 978

3. एक मूल राशि 2 वर्षों के लिए 10% वार्षिक चक्रवृद्धि ब्याज पर निवेश किया जाता है। यदि ब्याज छमाही संयोजित होता है, तो 1762 रुपये अधिक प्राप्त होंगे। राशि ज्ञात कीजिये?

- A. 560000 रुपये
- B. 320000 रुपये
- C. 420000 रुपये
- D. 600000 रुपये

4. एक व्यापारी अंकित मूल्य पर 40% की छूट देता है और प्रत्येक 14 वस्तुओं को खरीदने पर 2 वस्तुएं मुफ्त देता है और इस प्रकार 40% का लाभ प्राप्त करता है। तो ज्ञात करें कि अंकित मूल्य लागत मूल्य से कितने प्रतिशत अधिक है?

- A. $44\frac{2}{3}\%$
- B. $22\frac{3}{2}\%$
- C. $33\frac{3}{4}\%$
- D. $66\frac{2}{3}\%$

5. राम एक स्मार्ट-फोन खरीदने के लिए एक दुकान पर गया। दुकानदार ने उसे 15% कर का भुगतान करने के लिए कहा, यदि वह एक बिल चाहता था, और यदि नहीं,

तो वह वास्तविक कीमत पर 8% की छूट प्राप्त करने के बाद स्मार्ट-फोन खरीद सकता था। तब राम ने बिल नहीं लेने का फैसला किया और 5520 रुपये का भुगतान किया। बिल की राशि की तुलना में राम ने फोन खरीदने पर कितने रुपये बचाए?

- A. 1380 रुपये
- B. 1420 रुपये
- C. 1680 रुपये
- D. 1850 रुपये

6. यदि रहीम ने अपनी गति 25% कम कर दी है, तो उसे अपने गंतव्य तक पहुंचने में 2 घंटे अतिरिक्त लगेंगे। रहीम अपनी सामान्य गति से अपने गंतव्य तक पहुंचने में कितना समय लेगा?

- A. 8 घंटे
- B. 4 घंटे
- C. 5 घंटे
- D. 6 घंटे

7. फ्यूचर कंस्ट्रक्शन में दो प्रकार के कर्मचारी हैं, सामान्य स्नातक और इंजीनियर। कुल कर्मचारियों में से 60% कर्मचारी इंजीनियर हैं। तथा 55% सामान्य स्नातक, 6 लाख रुपये / वर्ष से अधिक कमाते हैं। यदि कुल कर्मचारियों का 70%, 6 लाख रुपये / वर्ष से अधिक कमाता है, तो इंजीनियरों का निम्न में से कौन सा अनुपात 6 लाख रुपये / वर्ष से कम कमाता है?

- A. $\frac{1}{3}$
- B. $\frac{1}{6}$
- C. $\frac{1}{4}$
- D. $\frac{1}{5}$

8. A एक काम को पूरा करने के लिए B और C द्वारा इसी काम को पूरा करने में लगने वाले समय से तीन गुना समय लेता है। यदि B एक काम को पूरा करने के लिए A और C द्वारा इसी काम को पूरा करने में लगने



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वाले समय से चार गुना समय लेता है। और यदि तीनों एक साथ काम करते हुए 24 दिनों में इस काम को पूरा कर सकते हैं, तो B और C इसी काम को कितने दिनों में पूरा करेंगे?

- A. 48
- B. 32
- C. 96
- D. 36

9. A उतना काम कर सकता है जितना B और C मिलकर एकसाथ कर सकते हैं। A और B मिलकर 10 घंटे में एक काम को कर सकते हैं और C इसे 50 घंटे में कर सकता है। तो, B को अकेले इस कार्य के दोगुने कार्य को पूरा करने में कितने दिन लगेंगे?

- A. 25 घंटे
- B. 48 घंटे
- C. 50 घंटे
- D. 12.5 घंटे

10. एक संख्या को दो भागों में इस प्रकार विभाजित किया जाता है कि पहले भाग का 80% भाग दूसरे भाग के 60% से 3 अधिक है और दूसरे भाग का 80% पहले भाग के 90% से 6 अधिक है। तो संख्या ज्ञात करें।

- A. 125
- B. 130
- C. 135
- D. 145

11. पहले 2 वर्षों के लिए किसी राशि पर ब्याज की दर 5% प्रति वर्ष है। अगले 4 वर्षों के लिए 8% प्रति वर्ष और 6 वर्षों के बाद की अवधि के लिए 10% प्रति वर्ष है। यदि 9 वर्ष की कुल अवधि के लिए साधारण ब्याज की राशि 1440 रुपये है। तो राशि (रुपये में) ज्ञात करें।

- A. 1750
- B. 2000
- C. 2333.33
- D. 2100

12. 1: 6 के अनुपात में दो तरल पदार्थ X और Y का मिश्रण एक टैंक में मौजूद है। जब इस मिश्रण में से 16 लीटर निकाला जाता है और इस टैंक में 16 लीटर तरल X डाला जाता है, तो यह अनुपात 3:

2 हो जाता है। टैंक में मौजूद तरल X की अंतिम मात्रा ज्ञात कीजिये?

- A. 18 लीटर
- B. 12 लीटर
- C. 8 लीटर
- D. 30 लीटर

13. एक बल्लेबाज के 20 पारियों में एक निश्चित औसत रन हैं। 21वीं पारी में, उसने 137 रन बनाए और उसका औसत 4 रन बढ़ जाता है। 21वीं पारी के बाद उसका औसत क्या होगा?

- A. 61 रन
- B. 49 रन
- C. 53 रन
- D. 57 रन

14. 1170 रुपये को A, B और C के बीच इस तरह वितरित किया जाता है कि A को B से 25% कम प्राप्त होता है लेकिन B को C का $\frac{1}{3}$ भाग प्राप्त होता है। B और C द्वारा एकसाथ प्राप्त राशि ज्ञात करें?

- A. 900
- B. 700
- C. 1000
- D. 950

15. एक बस 9 किमी/घंटा की रफ्तार से सड़क पर चलते हुए एक व्यक्ति को पार करती है। आदमी 3 मिनट तक बस को देख सकता था। बस की गति क्या है, यदि गायब होने के समय बस और आदमी के बीच की दूरी 2.75 किमी थी?

- A. 64 किमी/घंटा
- B. 55 किमी/घंटा
- C. 46 किमी/घंटा
- D. 73 किमी/घंटा

16. $\triangle ABC$ में, BD, $\angle B$ को समद्विभाजित करता है और AC को D पर प्रतिच्छेदित करता है। यदि $BC = 12$, $AC = 13$ और $AB = 14$ है, तो AD का मान ज्ञात करें?

- A. 6 सेमी

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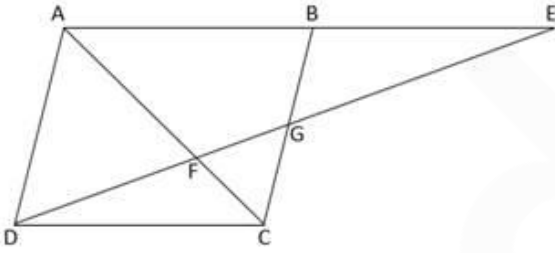
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- B. 8 सेमी
C. 7 सेमी
D. इनमें से कोई नहीं

17. $\triangle ABC$ में, AD और BE क्रमशः A और B से दोनों भुजाओं BC और AC पर डाले गये शीर्षलम्ब हैं और O पर एक दूसरे को प्रतिच्छेदित करते हैं। यदि $BD = DC$ और $\angle BAC = 66^\circ$ हैं, तो $\angle BCO$ की माप ज्ञात करें?

- A. 66°
B. 49.5°
C. 99°
D. 33°

18. दिए गए चित्र में, ABCD एक समांतर चतुर्भुज है। यदि $AB = BE$ और $FG = 4$ सेमी है, तो ED की लंबाई ज्ञात कीजिए।



- A. 16 सेमी
B. 24 सेमी
C. 20 सेमी
D. 32 सेमी

19. ABCD एक समलम्ब चतुर्भुज है, जिसमें $AB \parallel DC$ । यदि $AB = 15.6$ सेमी और विकर्ण AC और BD के मध्य बिंदु को मिलाने वाले रेखाखंड की लंबाई 3.6 सेमी है, तो CD की लंबाई ज्ञात करें। ($CD > AB$)

- A. 19.2 सेमी
B. 12 सेमी
C. 8.4 सेमी
D. 22.8 सेमी

20. ABCD एक समलम्ब चतुर्भुज है, जिसमें $AB \parallel DC$ तथा $AB = 4$ सेमी, $BC = 5$ सेमी, $CD = 6$

सेमी और $AD = 8$ सेमी है, तो $AC^2 + BD^2$ के बराबर है:

- A. 141 वर्ग सेमी
B. 122 वर्ग सेमी
C. 137 वर्ग सेमी
D. 131 वर्ग सेमी

21. एक $\triangle ABC$ में, AD और BE क्रमशः BC और AC पर शीर्ष-लंब है जो एक दूसरे को O पर काटते हैं। यदि $AO : OD = 7 : 9$, $BO : OE = 5 : 3$, तो $\triangle ABD$ के क्षेत्रफल और $\triangle ACD$ के क्षेत्रफल के बीच अनुपात ज्ञात कीजिए:

- A. 1 : 6
B. 1 : 36
C. 1 : 3
D. 1 : 9

22. यदि $\sin\theta$, $\sin 2\theta$, $\sin 3\theta$ समांतर श्रेणी में हैं तो θ का मान ज्ञात करें।

- A. $\frac{n\pi}{3}$, $n \in \mathbb{I}$
B. $\frac{n\pi}{6}$, $n \in \mathbb{I}$
C. $n\pi$, $n \in \mathbb{I}$
D. $\frac{n\pi}{2}$, $n \in \mathbb{I}$

23. यदि $\cos(A - B)$, $\cos A$ और $\cos(A + B)$

हरात्मक श्रेणी में हैं, तो $\cos A \cdot \sec \frac{B}{2}$ का मान ज्ञात करें।

- A. $\pm \sqrt{2}$
B. ± 2
C. 0
D. ± 1

24. यदि द्विघात समीकरण $Ax^2 + Bx + C = 0$ के मूल $\cot 34^\circ$ और $\tan 79^\circ$ हैं, तो

$\frac{A + 2B + 2C}{A}$ का मान ज्ञात करें।

- A. 1
B. 2



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- C. 3
D. -1

25. यदि $x + \frac{1}{x} = 2\sin 15^\circ$ है, तो $x^{2089} + \frac{1}{x^{2137}}$ का मान ज्ञात करें।

- A. $2\cos 15^\circ \cot 75^\circ$
B. 0
C. $2\cos 15^\circ$
D. $2\sin 15^\circ \tan 15^\circ$

Direction: Select the most appropriate option to substitute the underlined segment in the given sentence. If no substitution is required, select No improvement.

26. Beside being a honest person, he is a great leader.

- A. Besides being an honest person
B. Though he is an honest person
C. In fact being honest
D. Even being an honest person

Select the most appropriate option to fill in the blank.

27. Noah thought she had a good chance to get the job, _____ her mother was on the company's board of members.

- A. and
B. for
C. yet
D. still

Choose the most appropriate option to change the narration (direct/indirect) of the given sentence.

28. The student said, "Alas! My fate has failed me even after the hard work went through".

- A. The student exclaimed sadly that his fate had failed him even after the hard work he had gone through.
B. The student told that his fate failed him even after the hard work he had gone through.
C. The student told sadly that his fate had failed him even after the hard work he had gone through.

D. The student exclaimed sadly that his fate failed him even after the hard work he went through.

Choose the most appropriate option to change the narration (direct/indirect) of the given sentence.

29. Aditi said to Keshav, "You should consult a psychologist right now".

- A. Aditi commanded Keshav to consult a psychologist right in that time.
B. Aditi request Keshav that he should consult a psychologist right at that time.
C. Aditi advised Keshav to consult a psychologist right at that time.
D. Aditi told Keshav that he should consult a psychologist right at that time.

Select the most appropriate synonym of the given word.

30.

Evocative

- A. reminiscent
B. inciting
C. incendiary
D. falsified

Select the most appropriate antonym of the given word.

31.

Decant

- A. siphon
B. inundate
C. troglodyte
D. effuse

Select the word which means the same as the group of words given.

32.

One who studies methods of improving the quality of the human race especially by selective breeding

- A. demagogue
B. psephologist
C. eugenicist
D. pedagogue

Select the word which means the same as the group of words given.

33.

The fear of the sun
A. hemophobia



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- B. homophobia
- C. heliophobia
- D. hypochondria

Select the word which means the same as the group of the words given.

34. A person who makes or sells women's hats

- A. clique
- B. milliner
- C. nimble
- D. pedant

Select the word which means the same as the group of the words given.

35. A solemn procession, especially for a funeral

- A. cortege
- B. colt
- C. blurb
- D. alibi

36. **Select the INCORRECTLY spelt word.**

- A. influence
- B. itinerent
- C. ignorance
- D. impeach

37. **Select the correctly spelt word.**

- A. embarasment
- B. encouragement
- C. conscienteous
- D. comotion

Select the most appropriate synonym of the given word.

38. PUCKER

- A. smoothness
- B. crumple
- C. polish
- D. shine

Select the most appropriate synonym of the given word.

39. IMPIETY

- A. irreverence
- B. approbation
- C. bow
- D. veneration

Given below are four jumbled sentences. Out of the given options

pick the one that gives their correct order.

40.

P) Whereas Deimos orbits farther away, along an orbit that's tilted by 2 degrees off the plane of the Martian equator.

Q) The wonky orbit adds evidence to the idea that Phobos may once have been a giant ring that eventually coalesced into its present shape.

R) Mars has two small, lumpy moons, Phobos and Deimos.

S) Phobos orbits closer to the Red Planet and follows the line of Mars' equator.

- A. RSPQ
- B. RPQS
- C. QSRP
- D. QPRS

Given below are four jumbled sentences. Out of the given options pick the one that gives their correct order.

41.

P) It is grown in plantations and private properties.

Q) Also unlike other trees that go on to live for hundreds of years, coconut palm has a limited lifespan of about 50-80 years.

R) After producing nuts and leaves for these many years, when the tree senile and poses a threat of falling and causing threat to life and property, it is culled.

S) Coconut palm is not a naturally occurring indigenous forest species and is not part of the forest ecosystem.

- A. SQRP
- B. SPQR
- C. RPQS
- D. PQSR

In the sentence, identify the segment which contains the grammatical error. If the sentence has no error, then select 'No error'.

42. This emotion endorses the understanding that this Sikh practise is something exceptional.

- A. This emotion endorses the
- B. No error
- C. understanding that this
- D. Sikh practise is something exceptional

In the sentence, identify the segment which contains the grammatical error. If the sentence has no error, then select 'No error'.

43. To paraphrase Marcel Proust, the real voyage of discovery consists not in seeking new landscapes but to have new eyes.

- A. To paraphrase Marcel Proust, the
- B. landscapes but to have new eyes
- C. real voyage of discovery consists not
- D. No error

Given below is a passage with five blanks which have been numbered. Fill in the blanks by choosing the correct option given against the corresponding Question number.

Thought is the response of memory that has been stored through knowledge; knowledge is gathered through experience. That is, experience, knowledge, memory stored in the brain, then _____(###Q1###), then action. This _____(###Q2###) our pattern of living, and the whole process is based on this movement. Man has done this for the last million years. He _____(###Q3###) caught in the cycle, which is the movement of thought. And within this area, he has choice. He can go from one corner to the other and say, "This is my choice, this is my movement of freedom" — but it is always within the _____(###Q4###) field of the known. And knowledge is always accompanied by _____(###Q5###) because there is no complete knowledge about anything.

44. Select the most appropriate option to fill in the blank.

- A. confused
- B. thought
- C. sarcastic
- D. honest

45. Select the most appropriate option to fill in the blank.

- A. is
- B. are
- C. have

D. has

46. Select the most appropriate option to fill in the blank.

- A. was being
- B. were being
- C. has been
- D. have been

47. Select the most appropriate option to fill in the blank.

- A. limited
- B. unfettered
- C. unlimited
- D. cosmic

48. Select the most appropriate option to fill in the blank.

- A. cognizance
- B. ignorance
- C. wisdom
- D. competence

Direction: Select the most appropriate option to substitute the underlined segment in the given sentence. If no substitution is required, select No improvement.

49. Rati is two week too move the huge box to the second floor.

- A. too week to move
- B. too weak to move
- C. take two week moving
- D. cannot move

Direction: Select the most appropriate option to substitute the underlined segment in the given sentence. If no substitution is required, select No improvement.

50. Suppose if he win what would I have done!

- A. Suppose he be winner
- B. When he will win
- C. Even that he will win
- D. If he wins



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###ANSWERS###

1. Ans. B.

$(5a + 4b - 6c)^2$ पर विचार करते हैं

हम जानते हैं कि

$$\begin{aligned}(a+b-c)^2 &= a^2 + b^2 + c^2 + 2(ab - bc - ca) \\ \Rightarrow (5a + 4b - 6c)^2 &= (5a)^2 + (4b)^2 + (6c)^2 + 2(20ab - 24bc - 30ca) \\ &= 25a^2 + 16b^2 + 36c^2 + 40ab - 48bc - 60ca\end{aligned}$$

ट्रिक: इस तरह के प्रश्न को विकल्प का उपयोग करके और चिन्ह "+" या "-" देख कर हल किया जा सकता है। यहां, चर "c" में नकारात्मक चिन्ह है। इस प्रकार, "c²" में वर्ग करने पर नकारात्मक चिन्ह हट जाएगा, लेकिन "ca" और "bc" में नकारात्मक चिन्ह लगा रहेगा।

2. Ans. C.

माना a, b, c और d बहुपद p(x): के मूल हैं

$$\therefore \text{मूलों का योग} = a + b + c + d = 8$$

$$\text{और मूलों का गुणनफल} = abcd = 16$$

ऐसी स्थिति केवल तब उत्पन्न होती है जब a = b = c = d = 2 होता है

यहाँ, चार धनात्मक वास्तविक मूलों का AM:

$$(a+b+c+d)/4 = 2 \text{ और } GM = \sqrt[4]{abcd} = 2$$

AM = GM तब होता है जब संख्याएँ समान होती हैं

$$\therefore a = b = c = d = 2$$

$$\text{यहाँ, } ab + ac + ad + bc + bd + cd = -P \text{ है}$$

$$\therefore p = -24$$

$$\text{साथ ही, } abc + acd + abd + bcd = -Q \text{ है}$$

$$\therefore q = -32$$

$$\therefore pq = 768$$

3. Ans. B.

माना राशि p है।

\therefore प्रश्नानुसार,

$$\left\{ p \left(1 + \frac{10}{100 \times 2} \right)^{2 \times 2} - p \right\} - \left\{ p \left(1 + \frac{10}{100} \right)^2 - p \right\} = 1762$$

$$\Rightarrow \left\{ p \times \left(\frac{21}{20} \right)^4 - p \right\} - \left\{ p \times \left(\frac{11}{10} \right)^2 - p \right\} = 1762$$

$$\frac{34481p}{160000} - \frac{21p}{100} = 1762$$

$$\frac{34481p - 33600p}{160000} = 1762$$

$$\frac{881p}{160000} = 1762$$

$$\Rightarrow p = 320000 \text{ रुपये}$$

अतः, विकल्प B सही उत्तर है।

4. Ans. D.

माना प्रत्येक वस्तु का लागत मूल्य 10x और अंकित मूल्य y है

\therefore 16 वस्तुओं का लागत मूल्य होगा

$$16 \times 10x = 160x$$

साथ ही, 14 वस्तुओं का विक्रय मूल्य =

$$160x \times \frac{(100+40)}{100} = 224x$$

$$\therefore \text{प्रत्येक वस्तु का विक्रय मूल्य} = \frac{224x}{14} = 16x$$

$$\text{अब, } 16x = y \times \left(1 - \frac{4}{100} \right)$$

$$\Rightarrow 16x = y \times \frac{96}{100}$$

$$\Rightarrow y = \frac{50x}{3}$$

प्रश्नानुसार;

$$\frac{50x/3 - 10x}{10x} \times 100$$

$$\frac{20x}{30x} \times 100 = 66\frac{2}{3} \%$$

अतः, विकल्प D सही उत्तर है।

5. Ans. A.

प्रश्नानुसार,

$$\text{विक्रय मूल्य} \times \frac{(100-8)}{100} = 5520$$

$$SP \times \frac{92}{100} = 5520$$

$$\text{विक्रय मूल्य} = 6000 \text{ रुपये}$$

$$\text{कर के साथ विक्रय मूल्य} = 6000 + \frac{15}{100}$$

$$\times 6000$$

$$= 6000 + 900 = 6900 \text{ रुपये}$$



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∴ अभीष्ट बचत = 6900 - 5520 = 1380 रुपये

अतः, विकल्प A सही उत्तर है।

6. Ans. D.

रहीम की कम हुई गति = $(100 - 25)\% = \frac{3}{4}$
उसकी सामान्य गति और कम की गई गति का अनुपात

$$= 1 : \frac{3}{4} = 4 : 3$$

इसलिए, समय का अनुपात = 3 : 4

यहाँ, $(4 - 3) = 1 \rightarrow 2$ घंटे

इसलिए, उसका सामान्य समय होगा $3 \times 2 = 6$ घंटे

7. Ans. D.

माना कुल कर्मचारियों की संख्या 100 है

तो, इंजीनियरों की संख्या = 60 और सामान्य स्नातकों की संख्या = 40

सामान्य स्नातकों की संख्या जो 6 लाख रुपये / वर्ष से अधिक कमाते हैं = $40 \times 55\% = 22$

इसलिए, उन इंजीनियरों की संख्या जो 6 लाख रुपये / वर्ष से अधिक कमाते हैं = $100 \times 70\% - 22 = 48$

इसलिए, 6 लाख रुपये / वर्ष से कम कमाने वाले

$$\text{इंजीनियरों का अनुपात} = \frac{60 - 48}{60} = \frac{1}{5}$$

8. Ans. B.

A : (B + C) = 1 : 3 (दक्षता का अनुपात)

(A+B+C) : (B+C) = 4 : 3 (दक्षता का अनुपात)

माना (A+B+C) की दक्षता = 4 इकाई/दिन

(B+C) की दक्षता = 3 इकाई/दिन

दिया गया है कि, एक साथ काम करने पर वह इस काम को पूरा करने में 24 दिन का समय लेते हैं।

अतः, कुल काम = $4 \times 24 = 96$ इकाई

(B+C) द्वारा लिया गया समय = $96/3 = 32$ दिन

इसलिए, विकल्प B सही उत्तर है।

9. Ans. C.

$$\begin{array}{ccc} A + B = 10 \text{ hrs} & & 5 \\ & \searrow \quad \nearrow & \\ & 50 & \\ & \nearrow \quad \searrow & \\ C = 50 \text{ hrs} & & 1 \end{array}$$

(A + B + C) की दक्षता = $5 + 1 = 6$ इकाई/घंटा

C की दक्षता = 1 इकाई/घंटा

A+B की दक्षता = 5 इकाई/घंटा

प्रश्नानुसार,

A की दक्षता = B+C की दक्षता

माना A की दक्षता = A इकाई/घंटा

तो, $A = (5-A) + 1$

$A = 3$ इकाई/घंटा

$B = 5-A = 2$ इकाई/घंटा

अब, कुल कार्य = $50 \times C = 50 \times 1 = 50$ इकाई

कार्य का दोगुना = 100 इकाई

B को अकेले इस कार्य के दोगुने कार्य को पूरा करने में लगने वाला समय = $100 \div 2 = 50$ घंटे

अतः, विकल्प C सही उत्तर है।

10. Ans. C.

माना पहला भाग = a रुपये है और दूसरा भाग = b रुपये है

$$\frac{a \times 80}{100} = \frac{b \times 60}{100} + 3$$

$$4a - 3b = 15 \dots\dots\dots(1)$$

$$\text{पुनः } \frac{4b}{5} = \frac{9a}{10} + 6$$

$$8b - 9a = 60 \dots\dots\dots(2)$$

समीकरण (1) और (2) को हल करने पर, हमारे पास होगा:

$$a = 60 \text{ and } b = 75$$

$$\text{So, } a + b = 135$$

अतः, विकल्प C सही उत्तर है।

11. Ans. B.

माना राशि P रुपये है

तो, प्रश्नानुसार:

$$5\% \times 2P + 8\% \times 4P + 10\% \times 3P = 1440 \text{ रुपये}$$

$$72\% P = 1440$$

$$\text{तो, } P \text{ का } 100\% = (1440/72) \times 100 = 2000$$

रुपये

इसलिए, विकल्प B सही उत्तर है।

12. Ans. A.

	X : Y		X : Y
Initially	1 : 6	→ diff. ↑	1 : 6
Finally	(3 : 2) × 3	→ 8 ↓	9 : 6

अब, मिश्रण की कुछ मात्रा निकाली जाती है और तरल X मिलाया जाता है। तो, Y के अनुपात को समान बनाएं।



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चूँकि, अंतर $(9 - 1) = 8$ इकाई = 16 लीटर (दिया गया है कि : 16 लीटर टैंक में डाला जाता है)

∴ 1 इकाई = 2 लीटर

मिश्रण की मात्रा = $9 + 6 = 15$ इकाई = $15 \times 2 = 30$ लीटर

शुरुआत में - $X:Y = 3:2$

$3x + 2x = 30$ लीटर

⇒ $x = 6$ लीटर

∴ तरल X की अंतिम मात्रा = $3 \times 6 = 18$ लीटर

13. Ans. D.

माना 20 पारियों में औसत रन x हैं

इसलिए, 20वीं पारी तक कुल रन = $20x$

प्रश्नानुसार,

$20x + 137 = 21(x + 4)$

⇒ $x = 137 - 84 = 53$

इसलिए, 21वीं पारी के बाद उसके औसत रन = $x +$

$4 = 53 + 4 = 57$ रन

14. Ans. A.

A को B से 25% कम प्राप्त होता है

⇒ $25\% = \frac{1}{4}$

इसका अर्थ यह है कि यदि B को 4 इकाई प्राप्त होता है तो A को केवल 3 इकाई प्राप्त होगी।

A की राशि : B की राशि = $3 : 4$ (1)

B, को C से $\frac{1}{3}$ भाग कम प्राप्त होता है।

इसका अर्थ यह है कि यदि C को 3 इकाई प्राप्त होता है तो B को केवल 2 इकाई प्राप्त होगा।

B की राशि : C की राशि = $2 : 3$

साथ ही, B की राशि : C की राशि = $4 : 6$(2)

समीकरण (1) और (2) के संयोजन करने पर

A की राशि : B की राशि : C की राशि = $3 : 4 : 6$

अतः, B और C द्वारा एकसाथ प्राप्त राशि = $4 + 6 = 10$ इकाई

प्रश्न के अनुसार

⇒ 13 इकाई = 1170

⇒ 1 इकाई = 90

⇒ 10 इकाई = 900

B और C द्वारा एक साथ प्राप्त की गई राशि = ₹ 900

15. Ans. A.

$$\frac{2.75}{3 \times \frac{1}{60}} = 55$$

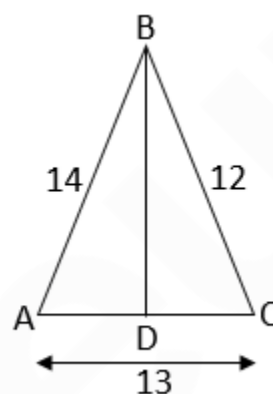
बस और आदमी की सापेक्ष गति =

किमी/घंटा

बस की गति = सापेक्ष गति + आदमी की गति = 55

+ $9 = 64$ किमी/घंटा

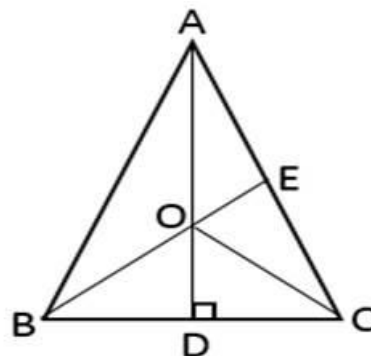
16. Ans. C.



हम जानते हैं कि $AD : DC = AB : BC = 14 : 12 = 7 : 6$

अब, $AD = AC \times \frac{7}{13} = 13 \times \frac{7}{13} = 7$ सेमी

17. Ans. D.



दिया गया है:

$\angle BAC = 66^\circ$

चूँकि AD और BE, $\triangle ABC$ के शीर्षलम्ब की तरह कार्य कर रहे हैं, O एक लम्बकेंद्र है

इसलिए $\angle BOC = 180^\circ - \angle BAC$

$\angle BOC = 180^\circ - 66^\circ = 114^\circ$

अब, $\triangle BOC$ में,



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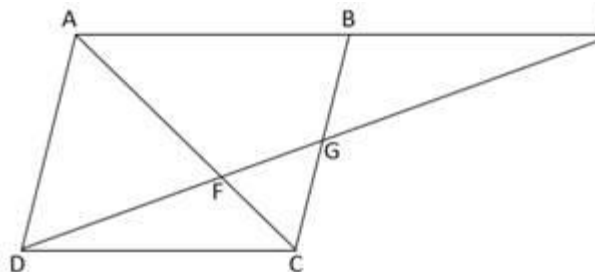
OD शीर्षलम्ब और मध्यिका दोनों है इसलिए $\triangle BOC$

एक समद्विबाहु त्रिभुज है

और $BO = OC$ और $\angle OBC = \angle OCB$

$\angle BCO = 66^\circ / 2 = 33^\circ$

18. Ans. B.



$\triangle AED$ और $\triangle BEG$ में,

$BG \parallel AD$

इसलिए $\triangle BEG \sim \triangle AED$

$$\frac{BE}{AE} = \frac{BG}{AD} = \frac{GE}{DE} = \frac{1}{2}$$

चूँकि $2BG = AD = BC$,

$BG = GC$

$$\frac{GC}{AD} = \frac{1}{2}$$

अब, $\triangle GFC$ और $\triangle ADF$ में,

$\angle AFD = \angle GFC$

एवं $\angle FAD = \angle FCG$

इसलिए $\triangle FCG \sim \triangle FAD$

$$\frac{FG}{FD} = \frac{GC}{AD} = \frac{1}{2}$$

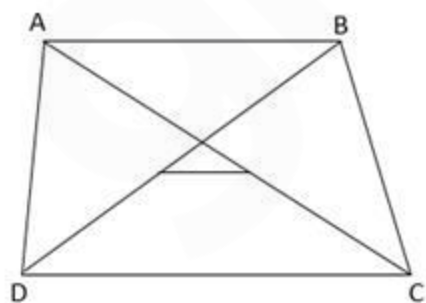
अतः $FD = 2FG = 8 \text{ cm}$

तथा $GD = 4 + 8 = 12 \text{ cm}$

अब,

$ED = 2GD = 2 \times 12 = 24 \text{ cm}$

19. Ans. D.



By the property of Trapezium,

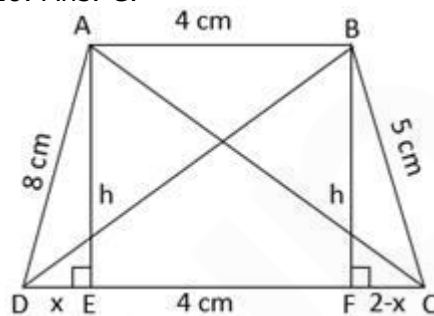
length of line adjoining the midpoints of

$$\text{diagonals} = \frac{1}{2} (CD - AB)$$

$$3.6 = \frac{1}{2} (CD - 15.6)$$

$$CD = 7.2 + 15.6 = 22.8 \text{ cm}$$

20. Ans. C.



Let $AE = BF = h$ and DE be x ,

then $CF = (2 - x)$

In $\triangle BDF$,

By Pythagoras Theorem,

$$BF^2 + FD^2 = BD^2$$

$$\Rightarrow BD^2 = h^2 + (4 + x)^2 \dots (1)$$

In $\triangle BFC$,

By Pythagoras Theorem,

$$BF^2 + FC^2 = BC^2$$

$$\Rightarrow 5^2 = h^2 + (2 - x)^2$$

$$\Rightarrow h^2 = 21 + 4x - x^2$$

Put this value in Equation (1)

$$\Rightarrow BD^2 = 21 + 4x - x^2 + 16 + 8x + x^2$$

$$\Rightarrow BD^2 = 37 + 12x \dots (2)$$

In $\triangle ACE$,

By Pythagoras Theorem,

$$AE^2 + EC^2 = AC^2$$

$$\Rightarrow AC^2 = h^2 + (6 - x)^2 \dots (3)$$

In $\triangle ADE$,

By Pythagoras Theorem,

$$AE^2 + ED^2 = AD^2$$

$$\Rightarrow 8^2 = h^2 + x^2$$

$$\Rightarrow h^2 = 64 - x^2$$

Put this value in Equation (3)

$$\Rightarrow AC^2 = 64 - x^2 + 36 - 12x + x^2$$

$$\Rightarrow AC^2 = 100 - 12x \dots (4)$$

By adding equation (3) and (4)

$$\Rightarrow AC^2 + BD^2 = 100 - 12x + 37 + 12x$$

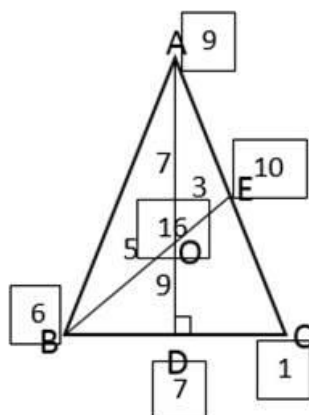
$$\Rightarrow AC^2 + BD^2 = 137$$

21. Ans. A.



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Given $AO : OD = 7 : 9$

Let point A has a weight of 9 mass point, then D will have a weight of 7 mass point and total weight on point O will be of 16 (9 + 7) mass point.

Again given $BO : OE = 5 : 3$

point O has a weight of 16 mass point, so point B will have a weight of 6 mass point

$\times \frac{3}{8}$
(16 $\times \frac{3}{8}$) and point E will have 10 (16 - 6) mass point.

And point C will have a weight of 1 mass point (7 - 6).

So, $BD : DC = 1 : 6$

Since height of both the $\triangle ABD$ and $\triangle ACD$ is same, ratio of their areas will be equal to ratio of their bases.

So Area ($\triangle ABD$) : Area ($\triangle ACD$) = $BD : DC = 1 : 6$

22. Ans. D.

Given,

$\sin\theta, \sin 2\theta, \sin 3\theta$ are in A.P.

Then, $2\sin 2\theta = \sin\theta + \sin 3\theta$

$$\Rightarrow 2\sin 2\theta = 2\sin 2\theta \cdot \cos\theta$$

$$\Rightarrow \sin 2\theta (\cos\theta - 1) = 0$$

$$\Rightarrow \sin 2\theta = 0 \text{ or } \cos\theta = 1$$

$$\Rightarrow \theta = \frac{n\pi}{2} \text{ or } \theta = 2n\pi, n \in \mathbb{I}$$

Hence $\theta = \frac{n\pi}{2}$ is the solution.

23. Ans. A.

Given,

$\cos(A - B), \cos A$ and $\cos(A + B)$ are in H.P.

then $\frac{1}{\cos(A - B)}, \frac{1}{\cos A}$ and

$\frac{1}{\cos(A + B)}$ will be in A.P.

So,

$$\frac{2}{\cos A} = \frac{1}{\cos(A - B)} + \frac{1}{\cos(A + B)}$$

$$\Rightarrow \frac{2}{\cos A} = \frac{\cos(A - B) + \cos(A + B)}{\cos(A - B) \cos(A + B)}$$

$$\Rightarrow \cos A = \frac{2 \cos(A - B) \cos(A + B)}{\cos(A - B) + \cos(A + B)}$$

$$\Rightarrow \cos A = \frac{\cos 2A + \cos 2B}{2 \cos A \cos B} \quad [\because]$$

$$2 \cos A \cos B = \cos(A + B) + \cos(A - B)]$$

$$\Rightarrow 2 \cos^2 A \cos B = 2 \cos^2 A - 1 + 1 - 2 \sin^2 B$$

$$(\because \cos 2A = 2 \cos^2 A - 1 \text{ and } \cos 2B = 1 - 2 \sin^2 B)$$

$$\Rightarrow 2 \cos^2 A \cos B - 2 \cos^2 A = -2 \sin^2 B$$

$$\Rightarrow 2 \cos^2 A (\cos B - 1) = -2 \sin^2 B$$

$$\Rightarrow 2 \cos^2 A (1 - 2 \sin^2 \frac{B}{2} - 1) = -2 (4 \sin^2 \frac{B}{2} \cos^2 \frac{B}{2})$$

$$\Rightarrow 2 \cos^2 A (-2 \sin^2 \frac{B}{2}) = -8 \sin^2 \frac{B}{2} \cos^2 \frac{B}{2}$$

$$\Rightarrow \cos^2 A = 2 \cos^2 \frac{B}{2}$$

$$\Rightarrow \cos^2 A \cdot \sec^2 \frac{B}{2} = 2$$

$$\Rightarrow \cos A \cdot \sec \frac{B}{2} = \pm \sqrt{2}$$

24. Ans. C.

Given,

$\cot 34^\circ$ and $\tan 79^\circ$ (or $\cot 11^\circ$) are the roots of equation $Ax^2 + Bx + C = 0$

then, Sum of roots = $\frac{-B}{A} = \cot 34^\circ + \cot 11^\circ$



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and Product of roots $= \frac{C}{A} =$
 $\cot 34^\circ \cdot \cot 11^\circ$

We know that $\cot 45^\circ = 1$

$$\Rightarrow \cot(34^\circ + 11^\circ) = 1$$

$$\Rightarrow \frac{\cot 34^\circ \cot 11^\circ - 1}{\cot 34^\circ + \cot 11^\circ} = 1$$

$$\Rightarrow \cot 34^\circ \cot 11^\circ - 1 = \cot 34^\circ + \cot 11^\circ$$

$$\Rightarrow \cot 34^\circ + \cot 11^\circ - \cot 34^\circ \cot 11^\circ = -1$$

Now, the required,

$$\frac{A + 2B + 2C}{A}$$

$$= 1 + \frac{2B}{A} + \frac{2C}{A}$$

$$= 1 - 2(\cot 34^\circ + \cot 11^\circ - \cot 34^\circ \cot 11^\circ)$$

$$= 1 - 2 \times (-1)$$

$$= 1 + 2$$

$$= 3$$

25. Ans. A.

$$\text{Given, } x + \frac{1}{x} = 2\sin 15^\circ$$

$$\Rightarrow x + \frac{1}{x} = 2 \times \frac{\sqrt{3} - 1}{2\sqrt{2}}$$

$$\Rightarrow x + \frac{1}{x} = \frac{\sqrt{3} - 1}{\sqrt{2}}$$

By squaring both sides,

$$\Rightarrow x^2 + \frac{1}{x^2} + 2 = \frac{4 - 2\sqrt{3}}{2}$$

$$\Rightarrow x^2 + \frac{1}{x^2} = -\sqrt{3}$$

By cubing both sides

$$\Rightarrow x^6 + \frac{1}{x^6} + 3x^2 \cdot \frac{1}{x^2} \left(x^2 + \frac{1}{x^2} \right) = -3\sqrt{3}$$

$$\Rightarrow x^6 + \frac{1}{x^6} + 3(-\sqrt{3}) = -3\sqrt{3}$$

$$\Rightarrow x^6 + \frac{1}{x^6} = 0$$

$$\Rightarrow \frac{x^{12} + 1}{x^6} = 0$$

$$\Rightarrow x^{12} = -1$$

Now, the required,

$$x^{2089} + \frac{1}{x^{2137}}$$

$$= (x^{12})^{174} \cdot x + \frac{1}{(x^{12})^{178} \cdot x}$$

$$= (-1)^{174} \cdot x + \frac{1}{(-1)^{178} \cdot x}$$

$$= x + \frac{1}{x}$$

$$= 2\sin 15^\circ$$

$$= 2\cos 15^\circ \cdot \tan 15^\circ$$

$$= 2\cos 15^\circ \cdot \cot 75^\circ$$

26. Ans. A.

'Beside' is a preposition meaning next to something/ someone" and 'Besides' means "as well as something/ someone". But here we need the adverb "besides" here, to refer to two different qualities, honesty and leadership, parallelly. Also, 'honest' starts with a consonant but sounds as a vowel, as the H becomes silent. So, 'an' is the correct article to use here.

'Though' and 'even' are used to draw difference, not parallelism. And "In fact" does not go with the context of the sentence.

Thus, option a becomes the correct answer

27. Ans. B.

Here the second sentence is the reason for the preceding clause. Therefore, we will use the conjunction "for" here as it is used to introduce the reason for the preceding clause.

Hence, option B is the correct answer.

28. Ans. A.

It is an exclamatory sentence. When the exclamatory words like hurrah, bravo, alas etc. are used we use the verb according to the expression or use the structure "exclaim with _ (the expression) _" / "exclaim + adverb form of expression". As of here, the student seems to be disappointed or sad. Hence, "exclaim sadly" is the correct verb to use here.

Also, in case of exclamatory sentences 'that' is used as a conjunction and the tense of the reported verb (has failed,



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went) is changed according to the reporting verb (said).

Hence, Option A is correct.

29. Ans. C.

It is an imperative sentence. This is a piece of advice. Hence "Advise" is the correct verb to use here. As the sentence is in past tense, it has become 'advised'. Also, in case of imperative sentences 'to' is used as a conjunction being followed by the verb of reported portion, making it an infinitive. So, the second verb remains in its root form. Hence, option C is the correct answer.

30. Ans. A.

Let us understand the meaning of these words-

Evocative- bringing strong images, memories, or feelings to mind

Reminiscent- absorbed in or suggesting absorption in memories

Inciting- encourage or stir up (violent or unlawful behavior)

Incendiary- (of a device or attack) designed to cause fires

Falsified- alter (information, a document, or evidence) so as to mislead

Hence option A is the correct answer

31. Ans. B.

Let us understand the meaning of these words-

Decant- to pour (a liquid, especially wine) from one container into another

Siphon- a tube used to convey liquid upwards from a reservoir and then down to a lower level of its own accord. Once the liquid has been forced into the tube, typically by suction or immersion, flow continues unaided

Inundate- overwhelm (someone) with things or people to be dealt with

Troglodyte- a person who is regarded as being deliberately ignorant or old-fashioned

Effuse- give off (a liquid, light, smell, or quality)

As we can see that option A and D are synonyms of Decant and option C has no relation to Decant. Hence option B is the correct answer.

32. Ans. C.

Let us understand their meanings-

Demagogue- A political leader who tries to win support by using Arguments based on emotion rather than reason

Psephologist- A person (sociologist) who studies election trends

Eugenicist- A person who studies methods of improving the quality of the human race especially by selective breeding

Pedagogue- a teacher, especially a strict or pedantic one

Hence option C is the correct answer.

33. Ans. C.

Let us understand their meanings-

Hemophobia- Fear of blood

Homophobia- dislike of or prejudice against homosexual people

Heliophobia- Fear of the sun

Hypochondria- Fear of getting ill

Hence option C is the correct answer.

34. Ans. B.

Clique: An exclusive circle of people with a common purpose

Milliner: Someone who makes and sells hats

Nimble: Moving quickly and lightly

Pedant: A person who pays more attention to formal rules and book learning than they merit

Hence, option B is the correct answer.

35. Ans. A.

Cortege: A funeral procession

Colt: A young male horse under the age of four

Blurb: A promotional statement (as found on the dust jackets of books)

Alibi: A claim or piece of evidence that one was elsewhere when an act, typically a criminal one, is alleged to have taken place.

Hence, option A is the correct answer.

36. Ans. B.

The incorrectly spelt word is "Itinerent" and the correctly spelt word is "Itinerant" which means traveller.

Let's understand the meaning of other words:

Influence: a power to affect persons or events especially power based on prestige etc

Ignorance: lack of knowledge

Impeach: to charge someone of misconduct

Hence, option B is the correct answer.

37. Ans. B.

Option B has the correctly spelt word.

Encouragement means

Correct spelling of other words along with their meanings:

Embarrassment: The shame you feel when your inadequacy or guilt is made public

Conscientious: Characterized by extreme care and great effort

Commotion: A disorderly outburst or tumult

38. Ans. B.

Let's understand the meaning of the given words:

Pucker: tightly gather or contract into wrinkles or small folds.

E.g.: the child's face puckered, ready to cry

Smoothness: a texture without roughness; smooth to the touch

Crumple: to gather something into small wrinkles or folds

E.g.: she crumpled her lips

Polish: make (a surface) shiny

Shine: be bright by reflecting or casting light

Hence, option B is the correct answer.

39. Ans. A.

Let's understand the meaning of the given words:

Impiety = lack of piety or reverence

E.g.: he blamed the fall of the city on the impiety of the people

Irreverence = a lack of respect for people or things that are generally taken seriously

E.g.: an attitude of irreverence towards politicians

Approbation = official recognition or approval

Bow = bend one's knee or body, or lower one's head

Veneration = a feeling of profound respect for someone or something

Hence, option A is the correct answer.

40. Ans. A.

Sentence R is the best fit for the opening sentence as it introduces the topic – the two moons of Mars. This eliminates option C and D.

Sentences S and P make a mandatory pair as they both tell us about the two moons of the Mars – Phobos and Deimos (use of "whereas" in P suggests that it comes after S); this eliminates option B.

The correct logical sequence is RSPQ.

Hence, option A is the correct answer.

41. Ans. B.

Sentence S is the best fit for the opening sentence as it mentions the introduction of the 'coconut tree'.

This eliminates option C and D.

Sentences S and P are mandatory pairs as sentence P explains where actually the coconut trees, mentioned in the opening sentence, are grown (i.e. in plantations and private properties).

The correct logical order is SPQR.

Hence, option B is the correct answer.

42. Ans. D.

Option D has the grammatically incorrect part. The word "practise" is a verb which means to do or play something regularly or repeatedly in order to become skilled at it. "Practice" is a noun which means something that is usually or regularly done, often as a habit, tradition, or custom. Here in the sentence, we need a noun. Therefore, replace "practise" with "practice" to make the sentence grammatically correct.

43. Ans. B.

Option B has the grammatically incorrect answer. The phrase before 'but' uses the gerund – seeking (a noun). To maintain the parallel structure of the sentence, replace 'to have' with "having" (a gerund).

44. Ans. B.

A Noun is required in the blank. Out of the given options only 'thought' is a noun which means an idea. All the other options confused, sarcastic and honest are adjectives. Also from the first sentence of the passage, we can see a process that is mentioned in the first sentence is arranged in reverse order in the 2nd one. Hence, option B is the correct answer.

45. Ans. A.

"This" is a singular pronoun and it will take singular helping verb "is" after it. Thus, "are" and "have" are eliminated.



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Also, the sentence is in simple present tense; therefore "has" is also eliminated. Hence, option A is the correct answer.

46. Ans. C.

"He" is a singular pronoun and it will take singular helping verb after it. Thus, "were being" and "have been" are eliminated. Also, the sentence is in active voice thus "was being" is also eliminated. Thus, option C is the correct answer.

47. Ans. A.

In context of the sentence, a word is required to compliment the word "within" which means inside or surrounded by. Thus, 'limited' is the correct word. 'Unfettered' means lose which does not fit in context of the sentence. Similarly, 'cosmic' and 'unlimited' are in contrast with the word "within". Thus, option A is the correct answer.

48. Ans. B.

Ignorance which means lack of knowledge is the most appropriate option as in the latter part of the sentence it is mentioned that "there is no complete knowledge about anything." Thus, "ignorance" is the word complementing this part. Cognizance means knowledge or awareness, wisdom means knowledge, competence means ability. All the other options are in contrast with the latter part of the sentence. Hence, option B is the correct answer.

49. Ans. B.

The given sentence does not make sense as it is grammatically incorrect. While forming a simple sentence we use the structure "too....to". Also, a person cannot be 'week' for week means "a period of seven days". It should be 'weak', meaning lacking the physical strength or energy.

Hence, option B is the correct answer.

50. Ans. D.

To form a conditional sentence, either use 'suppose' or 'if'. They cannot be used together. He is a third person and singular noun, and the sentence is in present tense. Hence '-s' will be added with the verb. Thus, option D is the correct answer.



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