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CBT I (Mathematics, Mental Ability, General Science & General Awareness)

Ans.1(D)

Ans.2(D)

Kolam Particularly Vulnerable (PGTV) tribes vacate their village and relocate somewhere else due to superstitions as they believe this the way to get rid of evils.

Ans.3(D)

Johann Wilhelm Ritter is known for his discovery of ultraviolet light in 1801. A year earlier, in 1800, William Herschel discovered infrared light.

Ans.4(C)

HDL is considered the best Cholesterol.

Ans.5(D)

Pace-maker is associated with Heart.

Ans.6(C)

In a state of USA a microorganism Streptomyces griseus that played a role in treating tuberculosis is now officially recognised as state microbe.

Ans.7(C)

The book "Origin of Species" is written by Charles Darwin.

Ans.8(B)

Ashoka is known as Devanam Priya.

Ans.9(C)

Ans.10(D)

Ans.11(D)

The ionosphere is a region of Earth's upper atmosphere, from about 60 km to 1,000 km altitude that includes the thermosphere and parts of the mesosphere and exosphere. It is ionized by solar radiation, plays an important part in atmospheric electricity and forms the inner edge of the magnetosphere.

Ans.12(C)

Mahatma Gandhi gave the title of Mahatma to Madan Mohan Malviya.

Ans.13(B)

24th February is observed Central Excise day.

Ans.14(B)

The headquarters of Northern railway is situated at New Delhi.

Ans.15(B)

Sachin Tendulkar is a first sportsperson to win Bharat Ratna.

Ans.16(A)

Mumbai, Kolkata, Hyderabad, Noida are the four cities of India does the minting of Indian coins takes place.

Ans.17(C)

Satyajit Ray has not won a Nobel Award.

Ans.18(D)

Dollu Kuniha is a folk dance of Rajasthan.

Ans.19(C)

The number of parliamentary seats (Lok Sabha) of Karnataka is 28.

Ans.20(D)

Sarojini Naidu was the first female Governor of India.

Ans.21(B)

the Idukki Dam is located in Kerala.

Ans.22(B)

Ans.23(C)

400 km

Ans.24(D)

Article 127 Explains to Appointment of ad hoc judges.

Ans.25(A)

Right to equality fundamental right is concerned with abolition of social distinctions.

Ans.26(D)

Integrated Rural Development Programme was started in Sixth five plan time period of sixth five year plan is (1980- 85)

Ans.27(D)

In 1994 AD, the NSE 50 stock exchange was established on the recommendation of the Ferwani Committee.

Ans.28(B)

Ohm's law is valid in case of conductor.

Ans.29(B)

Swarnim Bharat: Virasat aur Vikas

Ans.30(D)

Doris Day, who recently died at the age of 97, was an actress.

Ans.31(C)

Piyush Goyal

Ans.32(D)

Square Kilometre Array is a radio telescope.

Ans.33(D)

The Jnanpith Award is a literary award in India and awarded by Bhartiya Jnanpith. The award was instituted in 1961.

Ans.34(A)

Excretion is performed by the kidneys in the human body.

Ans.35(C)

Bronze Age

Ans.36(C)

In Hong Kong 6,000 pigs were culled after African swine fever (ASF) was detected in an animal at a slaughterhouse.

Ans.37(B)

Dr. K.M. Cherian

Ans.38(C)

Manohar Joshi

Ans.39(D)

ITC

Ans.40(A)

Mt Kosciuszko

Ans.41(B)

2015, 2016 and 2018.

Ans.42(B)

Required average = $2400/6 = 400$

Ans.43(C)

Required %

$$= \frac{(475+325+525)-(275+375+425)}{(275+375+425)} \times 100$$

$$= \frac{250}{1075} \times 100 = 23.25\% \approx 23\%$$

Ans.44(D)

Ans.45(D)

Ans.46(B)

Rakesh's speed in still water

$$= \frac{3(21+15)}{21-15} = \frac{3 \times 36}{6} = 18 \text{ kmph}$$

Ans.47(A)

Required profit % = $\frac{90}{910} \times 100 = 9.89\% \approx 10\%$

Ans.48(D)

Required distance = $\frac{30 \times 48}{(48-30)} \times \frac{18}{60} = 24 \text{ km}$

Ans.49(C)

P and Q can do the work in 10 days together

$$= 10 \left(\frac{1}{50} + \frac{1}{40} \right)$$

Rest of work = $1 - \frac{9}{20} \times \frac{11}{20}$

Q will do the rest of the work in

$$= 40 \times \frac{11}{20} = 22 \text{ days}$$

Ans.50(B)

Other side = $\sqrt{25^2 - 24^2} = 7 \text{ m}$

Area = $24 \times 7 = 168 \text{ m}^2$

Ans.51(D)

L.C.M = $4712/19 = 248$

Ans.52(A)

Work done by waste pipe in 1 minute

$$= \frac{1}{40} - \left(\frac{1}{24} + \frac{1}{30} \right) = -\frac{1}{20}$$

So, waste pipe will empty the full cistern in 20 minutes.

Ans.53(D)

Required ratio = $36 : 100 = 9 : 25$

Ans.54(C)

P : Q : R = $12000 : 13500 : 15000$

$= 8 : 9 : 10$

Profit share of B = $\frac{11070}{(8+9+10)} \times 9$

$= ₹. 3690$

Ans.55(B)

Number of passed candidates = $\frac{160 \times (45-16)}{48-16}$
 $= 145$

Ans.56(B)

$$\sqrt{\frac{\csc^2 \theta - \operatorname{cosec} \theta + \operatorname{cosec}^2 \theta + \operatorname{cosec} \theta}{\csc^2 \theta - 1}}$$

$$\Rightarrow \sqrt{\frac{2 \operatorname{cosec}^2 \theta}{\cot^2 \theta}}$$

$$\Rightarrow \sqrt{\frac{2}{\sin^2 \theta} \times \frac{\sin^2 \theta}{\cos^2 \theta}} = \sqrt{2 \sec^2 \theta} = \sqrt{2} \sec \theta$$

Ans.57(C)

$\sec A - \tan A = \frac{1}{x}$ ----- (I)

We know = $\sec^2 \theta - \tan^2 \theta = 1$

$(\sec A - \tan A)(\sec A + \tan A) = 1$

$\frac{1}{x}(\sec A + \tan A) = 1$ { from equation (I)}

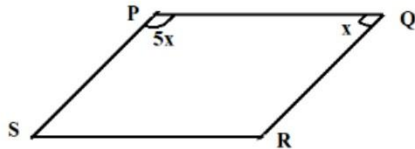
$\sec A + \tan A = x$ ----- (II)

Equation (I) + Equation (II)

$2 \sec A = x + \frac{1}{x}$

$\cos A = \frac{2x}{x^2 + 1}$

- Ans.58(B) Number of diagonals = $\frac{n(n-3)}{2}$
 $\frac{8(8-3)}{2} = 20$
- Ans.59(D) Required circumradius = $2 \times 9.5 = 19$ cm.
- Ans.60(A) $\angle P + \angle R = 145^\circ$
So, $\angle Q = 180^\circ - 145^\circ = 35^\circ$
 $\angle P + 3\angle Q = 180^\circ$
 $\angle P + 3 \times 35^\circ = 180^\circ$
 $\angle P = 75^\circ$
 $\angle P = 145^\circ - 75^\circ = 70^\circ$
 $\angle CDA = \frac{180^\circ - 70^\circ}{2} = \frac{110^\circ}{2} = 55^\circ$
- Ans.61(B)
- Ans.62(D)



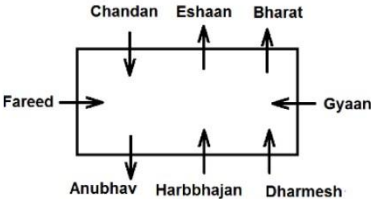
PSIQR
 $X + 5x = 180^\circ$
 $X = 30^\circ$
We know that
 $\angle P = \angle R = 5x$
 $\angle R = 5 \times x = 30 \times 5 = 150^\circ$
 $\frac{-7}{11} = \frac{-5-2}{y+6} \Rightarrow y+6 = 11$
 $y = 5$

- Ans.63(A)
- Ans.64(D) Required % = $\frac{\pi r^2}{2\pi r} \times 100 = \frac{r}{2} \times 100 = 450\%$
- Ans.65(B) $1 + \frac{1}{1 + \frac{2}{27}} \Rightarrow 1 + \frac{1}{1 + \frac{1}{14}} \Rightarrow 1 + \frac{1}{27} \Rightarrow \frac{68}{41}$
- Ans.66(C) $\frac{(146)^2 + 146 \times 143 + (143)^2}{(146)^3 - (143)^3} = \frac{(146)^2 + 146 \times 143 + (143)^2}{(146 - 143)(146)^2 + 146 \times 143 + (143)^2} = \frac{1}{3}$

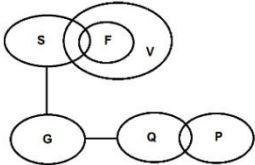
- Ans.67(D) $I = \sqrt{-\sqrt{3} + \sqrt{3 + 8\sqrt{(2 + \sqrt{3})^2}}}$
 $I = \sqrt{-\sqrt{3} + \sqrt{3 + 8(2 + \sqrt{3})}}$
 $I = \sqrt{-\sqrt{3} + \sqrt{3 + 16 + 8\sqrt{3}}}$
 $I = \sqrt{-\sqrt{3} + \sqrt{19 + 8\sqrt{3}}}$
 $I = \sqrt{-\sqrt{3} + \sqrt{(4 + \sqrt{3})^2}}$
 $I = \sqrt{-\sqrt{3} + 4 + \sqrt{3}}$
 $I = \sqrt{4} = 2$

- Ans.68(A) $(a + b + c)^2 = a^2 + b^2 + c^2 + 2ab + 2bc + 2ca$
 $13^2 = 53 + 2ab + 2bc + 2ca$
 $169 - 53 = 2(ab + bc + ca)$
 $116 \div 2 = ab + bc + ca$
 $ab + c(a + b) = 58$
- Ans.69(C) $\sqrt{y} = 25, \sqrt{x} = 24$
 $(\sqrt{24 + 25} - \sqrt{25 - 24})^{1/2}$
 $(\sqrt{49} - \sqrt{1})^{1/2}$
 $(7 - 1)^{1/2} = \sqrt{6}$

- Ans.70(B)
- Ans.(71-73)



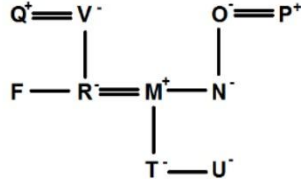
- Ans.71(C)
- Ans.72(D)
- Ans.73(D)
- Ans.(74-75)



- Ans.74(D)
- Ans.75(C)
- Ans.76(B)
- Ans.77(C)

24 \$ 36 % 12
 $(24 \times 36) \div 12 = 72$
Similarly
27 \$ 31 % 9
 $(27 \times 31) \div 9 = 93$
Given word does not have "D".
 $(32 \times 8) + \underline{32} = 272$
 $(48 \times 8) + \underline{48} = 408$
Baralachla Pass is in Himachal Pradesh.

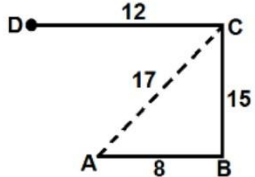
- Ans.78(C)
- Ans.79(D)
- Ans.80(A)
- Ans.81(D)
- Ans.82(D)
- Ans.83(B)
- Ans.(84-85)



- Ans.84(A)
- Ans.85(C)
- Ans.(86-88)

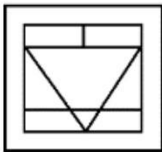
Word		Code
Outside	_____	jle
Result	_____	jme
Happy	_____	jue
Spirit	_____	jae
picture	_____	jte
Down	_____	jge
Morning	_____	jde
Good	_____	jce
Win/spark	_____	jye/jwe

- Ans.86(B)
- Ans.87(C)
- Ans.88(D)
- Ans.(89-90)

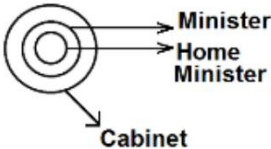


- Ans.89(D)
- Ans.90(B)

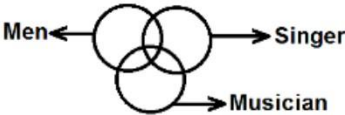
Ans.91(C)
Ans.92(C)
Ans.93(C)
Ans.94(D)
Ans.95(C)
Ans.96(D)



Ans.97(D)



Ans.98(C)



Ans.99(B)
Ans.100(A)



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