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

- Ans.1(A)** Out of the nine planets, mercury, Venus, earth and mars are called as the inner planets as they lie between the sun and the belt of asteroids the other five planets are called the outer planets. Alternatively, the first four are called Terrestrial.
- Ans.2(B)** Human Rights Day is observed on 10 December.
International Anti-corruption Day- 9 December
UNICEF Day - 11 December
National Energy Conservation Day - 14 December
- Ans.3(D)** The World Trade Organization (WTO) - it is an international organization which sets the rules for global trade. This organization was set up in 1995.
its the headquarters is located in Geneva.
- Ans.4(A)** In India, income tax is levied by Union Government.
- Ans.5(A)** The International Finance Corporation is a member of the World Bank Group and its headquarter is in Washington DC, United States. It was established in 1956.
- Ans.6(D)** The nationalization of banks in India took place in 1969 by Mrs. Indira Gandhi the then prime minister. 14 banks were nationalized at that time. These banks were mostly owned by businessmen and even managed by them.
- Ans.7(A)** When pH of rainwater drops below 5.6 it is acidic.
- Ans.8(B)** Kanyakumari
- Ans.9(B)** Atmaram Pandurang was the founder of Prarthana Samaj. Raja Rammohan Roy - Brahmo Samaj
Dayananda Saraswati - Arya Samaj
Jayaprakash Narayan - Sarvodaya movement
- Ans.10(B)** Shivaram Wildlife Sanctuary is located in Telangana.
- Ans.11(C)** The currency of Japan is Yen.
- Ans.12(C)** 'Triton' is the largest moon of Neptune planet.
- Ans.13(A)**
- Ans.14(C)** Ethylene gas is used in the manufacturing of plastic.
- Ans.15(A)** Camera is an optical instrument that uses convex lens.
- Ans.16(D)** Lord Dalhousie is known as the Father of Indian Railway.
- Ans.17(C)** ₹5650 per quintal
- Ans.18(C)** Guwahati is the judicial capital of Nagaland.
- Ans.19(A)** Bangalore
- Ans.20(B)** Kolkata
- Ans.21(A)** This was the Silsila which, with its spirit of equality and brotherhood, won the hearts of the people of the subcontinent.
- Ans.22(D)** All the above are the monetary policy instrument of RBI to control money supply in the market.
- Ans.23(A)**
- Ans.24(D)** Humayun's tomb is the tomb of the Mughal Emperor Humayun in Delhi, India. Tomb of Aurangzeb is located in Aurangabad district in the Indian state of Maharashtra. The tomb of Jahandar shah is also humayan's tomb in Delhi, India. The tomb of Jahangir is located in Shahdara Bagh in Lahore Pakistan, along the banks of the Ravi River.
- Ans.25(D)** Liothyronine, also known as L-thyroxine, is a manufactured form of the thyroid hormone, thyroxine. It is used to treat thyroid hormone deficiency including the severe form known as myxoedema. It may also be used to treat and prevent certain types of thyroid tumors.
- Ans.26(D)** India
- Ans.27(C)** Udayant Martand (The Rising Sun) was the first Hindi language newspaper published in India. Started on May 30, 1826, from Calcutta, the weekly news paper was published every Tuesday by Pt. Jugal Kishore Shukla.
- Ans.28(A)** On the last of the allotted days at the appointed time the speaker puts every question necessary to dispose of all the outstanding matters in connection with demand for grants, this is known as Guillotine.
- Ans.29(C)** The Blue Cross is related to Shooting.
- Ans.30(D)** Deoxyribonucleic acid, a self-replicating material which is present in nearly all living organisms as the main constituent of chromosomes. It is the carrier of genetic information.
- Ans.31(B)** Viktor Axelsen
- Ans.32(D)** Odisha
- Ans.33(C)** 4th.
- Ans.34(B)** D.R. Mehta the former Chairman of the Securities and Exchange Board of India (SEBI), who was bestowed the honour at the 2018 GfK Governance Awards.
- Ans.35(A)** Indian National Centre for Ocean Information Services.
- Ans.36(A)** USA, Mexico and Canada
- Ans.37(A)** Raksha Kavach - Multi-layer Protection against Multi-domain Threats
- Ans.38(B)** Dr. Zakir Hussain,
Sri .V.V Giri
Dr. Fakhruddin Ali Ahmed ,
Sri N. Sanjeeva Raddy,
- Ans.39(A)** Dolgoff was an early developer of digital projection and started thinking about LCD projectors in 1968. He founded Projectavision, the world's first dedicated digital projection company in 1988. He has published several papers in 3-D imaging, optics, holography, and LCD video projection, and has more than 65 patents granted worldwide with many others pending.
- Ans.40(D)** Shield AI, Inc
- Ans.41(D)** 12th term = $21 + 11 \times -4 = 21 - 44 = -23$
- Ans.42(B)** Required difference = $(7-4) \times \frac{360^\circ}{(4+5+7+8)}$
- Ans.43(C)** P:Q:R:S:T = 216:432:576:864:1152
= 3:6:8:12:16
- Ans.44(D)**
- Ans.45(D)** Ratio of their profits = A:B:C
= $4 \times 12 : 8 \times 9 : 3 \times 18$
= 48 : 72 : 54
= 8 : 12 : 9
C's profit share = $\frac{6293}{(8+12+9)} \times 9$
= $117 \times 9 = ₹ 1953$
- Ans.46(B)** Required % = $\frac{1650-1350}{1350} \times 100 = 22.22\% = 22\%$
- Ans.47(C)** Required average = $\frac{(550+450+600+700+850+650)}{6}$
= $\frac{3800}{6} = 633.33$

Ans.48(D) Required ratio = $\frac{(450+700)}{(650+750)} = \frac{1150}{1400} = \frac{23}{28}$

Ans.49(C) Required difference = L - P
= 3900 - 3800 = 100

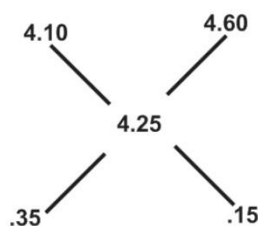
Ans.50(A) Required distance = $15 \times \frac{6 \times 4}{10} = 36$ km.

Ans.51(B) Downstream speed = $\frac{34}{4} = 9$ kmph
Upstream speed = $\frac{24}{4} = 6$ kmph
Speed of current = $\frac{9-6}{2} = \frac{3}{2} = 1.5$ kmph

Ans.52(D) Surface area = $4\pi r^2 = 4 \times \frac{22}{7} \times \frac{28}{2} \times \frac{28}{2} = 2464$ Cm.2

Ans.53(D) Boy can complete the work in $\left[\frac{12 \times 9}{12-9}\right] = 36$ days.
Man : Boy = $\frac{1}{12} : \frac{1}{36} = 3:1$
Boy's share = $\frac{1244}{4} \times 1 = ₹ 311$

Ans.54(C)



Required ratio = $\frac{7}{3} = 7:3$

Ans.55(A) C.I. = $16750 \times \frac{104}{100} \times \frac{108}{100} - 16750$
= ₹ 2063.6

Ans.56(D) Profit % = $24 - 11.5 - \frac{24 \times 11.5}{100} = 9.74\%$

Ans.57(B) $\frac{\sin^2 \theta}{\cos^2 \theta} - \sin^2 \theta = P$
 $\sin^2 \theta \left(\frac{1}{\cos^2 \theta} - 1 \right) = P$
 $\sin^2 \theta \cdot (\sec^2 \theta - 1) = P$
 $P = \sin^2 \theta \tan^2 \theta$

Ans.58(A) $\cot 210^\circ = \cot(180+30^\circ)$
= $\cot 30^\circ = \sqrt{3}$

Ans.59(D) $\therefore \cos \theta = 2 \cos^2 \left(\frac{\theta}{2} \right) - 1$

$\therefore y = \sqrt{\frac{1+2\cos^2 \left(\frac{\theta}{2} \right) - 1}{2}}$

$y = \cos^{\theta/2}$

Ans.60(C) $xy - x^2 = y^2$
 $x^2 + y^2 - xy = 0$
 $x^3 + y^3 = (x+y)(x^2 + y^2 - xy)$
 $x^3 + y^3 = (x+y) \times 0$
 $x^3 + y^3 = 0$

Ans.61(B) $a^3 = (2+\sqrt{3})$
 $\frac{1}{a^3} = \frac{1}{2+\sqrt{3}} \times \frac{2-\sqrt{3}}{2-\sqrt{3}} = 2 - \sqrt{3}$
 $\therefore a^3 + 1/a^3 = 2 + \sqrt{3} + 2 - \sqrt{3} = 4$

Ans.62(C) $\frac{l}{m} - \frac{1}{m} = \frac{-1}{l}$
 $\frac{(l-1)}{m} = \frac{-1}{l}$
 $|^2 - l = -m$
 $l - l^2 = m$

Ans.63(B) $493 + 297 - 289 - 29 = x$
 $X = 472$

Ans.64(D) $\frac{7^{(3 \times a/3) \times 7^{2a+1}}}{7^{(2a-2) \times 7^a}} = ?$
 $\frac{7^{(a+2a+1)}}{7^{(2a+a-2)}} = ?$
 $7^{(3a+1-3a+2)} = ?$
 $7^3 = ? \Rightarrow ? = 343$

Ans.65(C) $(2^4)^{0.16} \times (2^4)^{0.04} \times (2)^{0.2}$
 $2^{0.64} \times 2^{0.16} \times 2^{0.2}$

$2^{(0.64+0.16+0.2)}$

$2^1 = 2$

Ans.66(A) $\left(1 - \frac{1}{3}\right) \left(1 - \frac{1}{4}\right) \left(1 - \frac{1}{5}\right) \dots \left(1 - \frac{1}{(t-1)}\right) \left(1 - \frac{1}{t}\right)$

$\frac{2}{3} \times \frac{3}{4} \times \frac{4}{5} \dots \frac{t-2}{t-1} \times \frac{t-1}{t} = \frac{2}{t}$

Ans.67(D) 73) 5000 (68

438

620

584

36

Required number = 5000 + 73 - 36 = 5037

Ans.68(B) Slope = $\frac{-3}{4}$

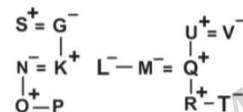
Ans.69(C) $180^\circ \times \left(\frac{n-2}{n}\right) = 150^\circ$

$6n - 12 = 5n$

$N = 12$

Ans.70(A) Circumference of wheel = $\pi D = \frac{22}{7} \times 28 = 88$ cm.
Total distance travelled = $88 \times 14 = 1232$ cm.

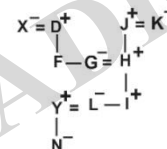
Ans.(71-72)



Ans.71(D)

Ans.72(B)

Ans.(73-74)



Ans.73(C)

Ans.74(D)

Ans.75(B)

Ans.76(D)

Ans.(77-79) Vivek > Wahid > Tilak > Shivam > Urijit/Karan > Karan/Urijit

Ans.77(C)

Ans.78(D)

Ans.79(D)

Ans.80(C)

Ans.81(A)

Ans.82(A)

Ans.83(D)

Ans.84(C)

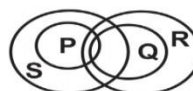
Ans.85(D)

Ans.86(B)

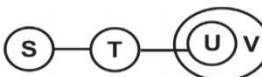
Ans.87(B)

Ans.88(D)

Given word does not have "S"



Ans.89(B)



Ans.90(B)



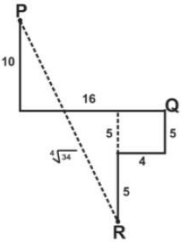
Ans.91(B)



Ans.(92-94)

Word		Code
Election	—	fyo
Survey	—	fna
People	—	fvo
Biopic / member	—	fra / fta
Law	—	fsa
Lead	—	fla
Review / nation	—	fha / fja

Ans.92(A)
Ans.93(D)
Ans.94(D)
Ans.(95-96)



Ans.95(B)
Ans.96(C)
Ans.97(D)
Ans.98(B)
Ans.99(D)
Ans.100(B)

Except "D" all are divisible by 21.
Only "B" contain vowel.

$29 \times 15 = 435$
 $36 \times 15 = 540$

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