CUET (UG)

GENERAL APTITUDE TEST

As Per New NTA Pattern

PREP GUIDE

with Most Probable & PYQs Qns

- 74 Chapterwise Theory & Exercise
- 1000+ Practice Questions
- 500+ PYQs
- PYQs Analysis
- Current Affairs Magazine (QR Code)

2026 EXAMINATION

5th EDITION

CUET 2025 Solved Papers

Gaurav Kumar

Paper Analysis

Chapter-wise Analysis of Question Paper 2025

S. No.	Name of the Chapter	NTA CUET Question Paper 2025	
		Nos. of Que.	%
1.	**GENERAL AWARENESS**	**20**	
1.1	History	4	8.00
1.2	Geography	4	8.00
1.3	Indian Polity	3	6.00
1.4	Economy	-	-
1.5	Science	2	4.00
1.6	General Knowledge	5	10.00
1.7	Current Affairs	2	4.00
2.	**LOGICAL REASONING**	**13**	
2.1	Analogy & Classification	1	2.00
2.2	Series	2	4.00
2.3	Coding & Decoding	1	2.00
2.4	Blood Relations	1	2.00
2.5	Directions & Distance	1	
2.6	Order & Ranking	-	-
2.7	Mathematical Operations	-	-
2.8	Logical Sequence of Words	-	-
2.9	Clock & Calendar	1	2.00
2.10	Venn Diagrams & Number Puzzle	-	-
2.11	Cube & Dice	-	-
2.12	Statement & Conclusion	-	-
2.13	Sitting Arrangement & Puzzle Test	1	2.00
2.14	Non-Verbal Reasoning	5	10.00
3.	**NUMERICAL ABILITY**	**17**	
3.1	Number System	5	10.00
3.2	HCF and LCM	-	-
3.3	Average & Ages	-	-
3.4	Percentage	-	-
3.5	Ratio & Proportion and Partnership	-	-

Contents

Previous Year Solved Papers, Current Affairs and Sample Papers

Previous Year Solved Papers

SCAN ME!

Chapter-wise Previous Years' Questions are covered inside this book.
To practice paper-wise, access through QR code

Sample Papers (2-5)

One Sample Paper has been provided at the end of the book. To get more, scan this QR code

SCAN ME!

Current Affairs of upcoming months

SCAN ME!

November Current Affairs have been provided inside. Scan this QR code to get Monthly Current Affairs of previous and upcoming months

Important Current Affairs for CUET 2025 (OCT & NOV.)

Scan this QR Code to download Current Affairs of upcoming months.

National Affairs

FASTag Annual Pass Crosses Twenty-Five Lakh Users Mark in Two Months

The National Highways Authority of India (NHAI) has sold 25 lakh annual FASTag passes within two months of its launch. The NHAI launched an annual FASTag pass on August 15, 2025.

India's First Animal Birth Control (ABC) Training Centre

The Lucknow Municipal Corporation (LMC) has established India's first Animal Birth Control (ABC) Training Centre in Jarhara, Uttar Pradesh, aiming to train professionals in street dog management and serve as a national hub for ABC training.

"DRAVYA" Portal to Catalogue 100 Ayush Substances in First Phase

The Ministry of Ayush has launched the "DRAVYA" (Digitised Retrieval Application for Versatile Yardstick of Ayush) portal, developed by CCRAS, to digitally catalogue 100 key medicinal substances in its first phase.

Prime Minister Shri Narendra Modi launches two major schemes in the agriculture sector

On 11 October 2025, Narendra Modi launched two major agriculture sector schemes totalling ₹35,440 crore. The first, the Pradhan Mantri Dhan-Dhaanya Krishi Yojana (outlay ₹24,000 crore), targets 100 low-performing agricultural districts. The second, the Dalhan Atmanirbharta Mission (outlay ₹11,440 crore) to boost pulses production (tur, urad, masoor).

Ministry of Mines Launches Pan-India E-Waste Recycling Drive

Under the guidance of PM Shri Narendra Modi and leadership of Union Minister of Coal & Mines Shri G. Kishan Reddy, the Ministry of Mines launched a Pan-India E-Waste Recycling Drive.

PM Modi unveiled youth-focused initiatives worth over ₹62k cr

Prime Minister Shri Narendra Modi unveiled youth-focused initiatives worth over Rs 62,000 crore at Vigyan Bhawan, New Delhi, aimed at boosting education, skilling, and entrepreneurship nationwide.

Govt revises India's solar potential to 3,343 GW from 2014's 749 GW

The government has upgraded India's ground-mounted solar photovoltaic (PV) potential to 3,343.37 gigawatt (Gw), up from 748.98 Gw estimated in 2014, as per the report by the National Institute of Solar Energy (NISE).

PM Modi lays foundation of ₹42,000 cr Mahi Banswara nuclear power project

Prime Minister Narendra Modi laid the foundation stone for Anushakti Vidhyut Nigam's (ASHVINI) Mahi Banswara Rajasthan Atomic Power Project at Banswara in Rajasthan.

1 NTA CUET Solved Paper 2025 (Held on: 3rd June 2025 Shift 1)

Instructions

Attempt all 50 questions out of the given 50 questions. Each question carries 5 marks. One mark will be deducted for a wrong answer.

Full Marks: 250 ***(Time: 60 Minutes)***

1. Three unbiased coins are tossed. What is the probability of getting at least 2 heads?

(*a*) $\frac{1}{8}$ (*b*) $\frac{1}{4}$

(*c*) $\frac{1}{2}$ (*d*) $\frac{1}{3}$

2. Match List-I with List-II.

List-I		List-II	
A.	Raoult's law	I.	$p = k_H x$
B.	Henry's law	II.	$\Delta T_f = K_f m$
C.	Elevation of boiling point	III.	$p = x_1 p_1^\circ + x_2 p_2^c$
D.	Depression in freezing point	IV.	$\Delta T_b = K_b m$

Choose the correct answer from the options given below:

(*a*) A - I, B - II, C - III, D - IV

(*b*) A - III, B - I, C - IV, D - II

(*c*) A - II, B - III, C - I, D - IV

(*d*) A - III, B - IV, C - I, D - II

3. Who among the following business personality is associated with the newly formed Department of Government Efficiency of USA?

(*a*) Elon Musk (*b*) Warren Buffet

(*c*) Bill Gates (*d*) Jeff Bezos

4. Seven people Anuj, Akash, Bablu, Dharmendra, Ritu, Sudha and Ranjan are standing in a single line, facing a house. Ritu is somewhere ahead of Sudha. There is exactly one person standing between Bablu and Ranjan. Dharmendra is immediate behind of Anuj, Sudha is behind both Akash and Dharmendra. If Dharmendra and Bablu are fourth and fifth in line respectively, then which of the following must be true?

(*a*) Anuj is first (*b*) Akash is first

(*c*) Sudha is sixth (*d*) Sudha is seventh

5. Choose the number which is different from the others in the group.

(*a*) 131 (*b*) 161

(*c*) 151 (*d*) 171

6. The ratio of the diameter and height of the right circular cylinder is 4 : 3 If the diameter of the cylinder is reduced by 25%, then its total surface area is reduced to 318.5π m^2. What is the circumference of the base of the cylinder?

(*a*) 7π m^2 (*b*) 14π m^2

(*c*) 25π m^2 (*d*) 28π m^2

7. Which of the following qualification is not correct for being eligible as the President of India?

(*a*) Should have completed the minimum age of 32 years

(*b*) Should be a citizen of India.

(*c*) Should be qualified for election as a member of the House of the People.

(*d*) Must not hold any office of profit under the Government of India or the Government of any State or under any authority under government.

8. The theme of which of the following dances is love and devotion towards Lord Vishnu and/or Lord Krishna?

(*a*) B Karatnatyam (*b*) Kathak

(*c*) Kuchipudi (*d*) Mohiniattam

9. Ajeeta and Sanjeeta undertake a project for ₹48000. Further, it is know that Ajeeta can finish the project in 24 days and Sanjeeta can finish the project in 40 days while working alone. If the project gets completed in just 10 days when Ranjeeta also helped them in completing the project, then determine the amount that Ranjeeta would have received, if they distributed the amount in proportion to their respective working capability?

(*a*) ₹10000 (*b*) ₹16000

(*c*) ₹12000 (*d*) ₹18500

10. A man can walk uphill at the rate of $2\frac{1}{2}$ km/hr and down hill at the rate of $3\frac{1}{4}$ km/hr. If the total time required to walk a certain distance up the hill and return to the starting point is 4 hr. 36 min, then what is the distance walked up the hill by the man?

(*a*) $6\frac{1}{2}$ km (*b*) $5\frac{1}{2}$ km

(*c*) $4\frac{1}{2}$ km (*d*) 4 km

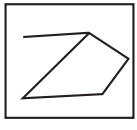
11. Which of the following is not a folk dance generally associated with the State of Maharashtra?

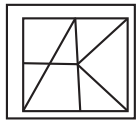
(*a*) Koli (*b*) Lavani

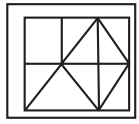
(*c*) Leken (*d*) Povada

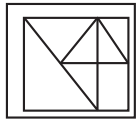
12. Find the option figure, in which figure (X) is embedded?

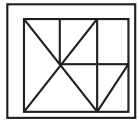
(X)



(*a*) 

(*b*) 

(*c*) 

(*d*) 

13. Who among the following has been appointed as Chief of ISRO in January 2025?

(*a*) Dr. S. Somnath

(*b*) Dr. K. Sivan

(*c*) Dr. A. S. Kiran Kumar

(*d*) Dr. V. Narayanan

14. The Government of India has sanctioned an Intra-state power transmission ano distribution scheme dor how many renewable-rich states?

(*a*) 8 (*b*) 6

(*c*) 14 (*d*) 7

15. Match List-I with List-II.

List-I (Time)		List-II (Angle between the hour hand and minute hand of a clock)	
A.	2:20 p.m.	I.	35°
B.	3:10 p.m	II.	70°
C.	4:30 p.m	III.	50°
D.	5:40 p.m	IV.	45°

Choose the correct answer from the options given below:

(*a*) A - III, B - I, C - II, D - IV

(*b*) A - III, B - IV, C - II, D - I

(*c*) A - III, B - IV, C - I, D - II

(*d*) A - III, B - I, C - IV, D - II

16. An observer, 1.5 m tall, is 28.5 m away from a chimney. The angle of elevation of the top of the chimney from her eyes is 45°. Determine the height of the chimney?

(*a*) 6.5 m (*b*) 15.5 m

(*c*) 28.5 m (*d*) 30 m

45. Consider the following frequency distribution.

Class	0-10	10-20	20-30	30-40	40-50	50-60	60-70
Frequency	4	5	7	10	12	8	4

Find the median of the distribution?

(*a*) 40 (*b*) 39

(*c*) 38 (*d*) 37

46. Study of kidneys is known as:

(*a*) Odontology

(*b*) Neurology

(*c*) Hematology

(*d*) Nephrology

47. If the product of *n* positive numbers is n^n, then what is the minimum value of their average for n = 6?

(*a*) 8

(*b*) 24

(*c*) 6

(*d*) Between +1 and –1

48. How many ways can 10 persons shake hands with two persons?

(*a*) 45

(*b*) 200

(*c*) 25

(*d*) 190

49. Read the information given below carefully and answer the question that follows:

Aditi, a salesgirl is appointed at a basic salary of ₹1200 per month. The condition of employment further stated that for every sale of ₹10000 or above she does, she will get 50% of basic salary and 10% of the sales as special incentive. However, this incentive scheme shall not work on the first ₹10000 of sales made.What should be the value of sales if Aditi wants to earn ₹7600 in a particular month?

(*a*) ₹60000 (*b*) ₹55000

(*c*) ₹50000 (*d*) ₹48000

50. Which of the following statements about electric wires is NOT true?

(*a*) The wire of black insulation, is a neutral wire.

(*b*) In our houses we receive AC electric power of 220 V with a frequency of 50 Hz. One of the wires in this supply is with red insulation, called live wire.

(*c*) The third is the earth wire that has pink insulation and this is connected to a metallic body deep inside earth. It is used as a safety measure to ensure that any leakage of current to a metallic body does not give any severe shock to a use.

(*d*) The electric wires used in houses are generally made of copper.

Answer Key

1. (*c*)	**2.** (*b*)	**3.** (*a*)	**4.** (*c*)	**5.** (*b*)	**6.** (*d*)	**7.** (*a*)	**8.** (*d*)	**9.** (*b*)	**10.** (*a*)
11. (*c*)	**12.** (*b*)	**13.** (*d*)	**14.** (*a*)	**15.** (*d*)	**16.** (*d*)	**17.** (*c*)	**18.** (*d*)	**19.** (*b*)	**20.** (*d*)
21. (*a*)	**22.** (*c*)	**23.** (*b*)	**24.** (*c*)	**25.** (*c*)	**26.** (*c*)	**27.** (*a*)	**28.** (*b*)	**29.** (*d*)	**30.** (*b*)
31. (*a*)	**32.** (*b*)	**33.** (*d*)	**34.** (*c*)	**35.** (*b*)	**36.** (*b*)	**37.** (*b*)	**38.** (*b*)	**39.** (*a*)	**40.** (*d*)
41. (*a*)	**42.** (*d*)	**43.** (*a*)	**44.** (*c*)	**45.** (*b*)	**46.** (*d*)	**47.** (*c*)	**48.** (*a*)	**49.** (*c*)	**50.** (*c*)

Explanations

1. (*c*) Total number of outcomes = $2^3 = 8$

Number of favourable outcomes

= 4 { HHT, HTH, THH, HHH}

Requined probability $= \frac{4}{8} = \frac{1}{2}$

2. (*b*) Raoult's law: Relates partial pressure of a component in a solution to its mole fraction:

Raoult's law: $\rightarrow p = x_1 p_1^0 + x2\, p_2^0 \rightarrow$ (III).

Henry's law: Solubility of a gas in a liquid is proportional to its partial pressure:

Henry's law: $p = k_H x \rightarrow$ (I).

Elevation of boiling point: Boiling point increases proportionally with solute molality:

Elevation of boiling point: $\Delta T_b = K_b m \rightarrow$ (IV).

Depression in freezing point: Freezing point decreases proportionally with solute molality:

Depression in freezing point: $\Delta T_f = K_f m \rightarrow$ (II).

3. (*a*) The Department of Government Efficiency (DOGE) was established by the second Trump administration on January 20, 2025, to modernize IT, boost productivity, and reduce regulations and spending.

Elon Musk served as the head of DOGE for four months, and recently, he resigned from the Trump administration.

His resignation followed public criticism of Donald Trump's "Big Beautiful Bill," which he claimed conflicted with DOGE's objectives.

4. (*c*)

1	Akash/Ritu
2	Akash/Ritu
3	Anuj
4	Dharmendra
5	Bablu
6	Sudha
7	Ranjan

Sudha is sixth.

5. (*b*) All four are palindromes of the form 1_×_1, but in 131, 151, 171 the middle digit is odd (3, 5, 7), whereas in 161 the middle digit is even (6).

6. (*d*) Let the diameter and height of cylinder be 4*x* and 3*x* respectively.

$\therefore$ Radius $= \frac{4x}{2} = 2x$

Total surface area of cylinder

$= 2\pi r\,(r + h)$

Now, $2\pi\,[2x\,(2x + 3x) - 2x \times 0.75\,(2x \times 0.75 + 3x)] = 318.5\pi$

$$\Rightarrow 2\left[10x^2 - \frac{3}{2}x\left(\frac{3}{2}x + 3x\right)\right] = 318.5$$

$$\Rightarrow 2\left[10x^2 - \frac{27}{4}x^2\right] = 318.5$$

$$\Rightarrow \frac{13}{2}x^2 = 318.5$$

$\Rightarrow x^2 = 49 \Rightarrow x = 7$

Circumference of base = $2\pi \times 2x = 2\pi \times 2 \times 7 = 28\pi$ m

7. (*a*) Article 58 (1) in the Constitution of India outlines the Qualifications for election as President. According to it:

No person shall be eligible for election as President unless he—

(*a*) is a citizen of India,

(*b*) has completed the age of thirty-five years, and

(*c*) is qualified for election as a member of the House of the People.

8. (*d*) Mohiniattam, literally interpreted as the dance of 'Mohini', the celestial enchantress of the Hindu mythology, is the classical solo dance form of Kerala. According to a Puranic story, Lord Vishnu took on the guise of a 'Mohini' to seduce the Asuras, both in connection with the churning of the ocean and the episode of the slaying of Bhasmasura.

SECTION

A

GENERAL KNOWLEDGE

01 Parliament of India, Countries and their Parliament

The **Parliament of India** is the supreme legislative body in India. The Parliament comprises the President of India and the two **Houses-Lok Sabha** (House of the People) and **Rajya Sabha** (Council of States).

India's government is bicameral; Rajya Sabha is the upper house and Lok Sabha is the lower house. The two Houses meet in separate chambers in the Sansad Bhavan in New Delhi.

Those elected or nominated (by the President) to either house of Parliament are referred to as members of parliament or MPs. The MPs of Lok Sabha are directly elected by the Indian people and the MPs of Rajya Sabha are elected by the members of the State Legislative Assemblies, in accordance with proportional representation. The Parliament is composed of 788 MPs, who serve the largest democratic electorate in the world.

Session of Parliament

The period during which the House meets to conduct its business is called a session. The Parliament must meet at least twice a year. In India, the parliament conducts three sessions each year.

- **Budget session:** February to May.
- **Monsoon session:** July to September.
- **Winter session:** November to December.

Some Important Post Hold

Chairman of Rajya Sabha	Shri C. P. Radhakrishnan (Vice President)
Speaker of Lok Sabha	Mr. Om Birla

* Term of Members of Rajya Sabha – 6 yrs
* Term of Members of Lok Sabha – 5 yrs

Countries and their Parliament

S. No.	Country	Name of Parliament
1.	Afghanistan	Shora
2.	Argentina	National Congress
3.	Australia	Parliament

S. No.	Country	Name of Parliament
4.	Bangladesh	Jatiya Sangsad
5.	Bhutan	Gyelyong Tshokhang
6.	Brazil	National Congress
7.	Bulgaria	Narodno Sabranie (National Assembly)
8.	Myanmar	Pyidaungsu Hluttaw
9.	Cambodia	Saphea Tamnang Reas
10.	Canada	Parliament of Canada
11.	China (Mainland)	National People's Congress (NPC)
12.	Colombia	Congress of the Republic of Colombia
13.	Cuba	National Assembly of People's power
14.	Denmark	Folketing
15.	Ethiopia	Federal Parliamentary Assembly
16.	France	Parlement Francais
17.	Germany	The Bundestag
18.	Iceland	Althing
19.	India	Sansad (Lok Sabha - Lower House) (Rajya Sabha - Upper House)
20.	Indonesia	Consultative Assembly
21.	Iran	Majles
22.	Iraq	Council of Representatives
23.	Israel	The Knesset
24.	Japan	The Diet
25.	Libya	House of Representatives
26.	Maldives	Majlis
27.	Mongolia	The State Great Khural
28.	Nepal	Federal Parliament
29.	New Zealand	House of Representatives
30.	Poland	Sejm
31.	South Africa	Parliament
32.	Spain	Cortes Generals
33.	Surinam	National Assembly
34.	Sweden	Riksdag
35.	United Kingdom (UK)	Parliament (House of Commons and House of Lords)
36.	United States	Congress (House of Representatives and Senate)

Civilian Awards

With Ranking Order

Bharat Ratna

CUET Past Year Questions

1. The chairman of Drafting Committee of the constitution was: [2023]
(Dr. B. R. Ambedkar)

2. Who appoints the chairman of the Union Public Service Commission: [2023]
(President)

3. In which year "Panchayati Raj" was passed in Loksabha and Rajaysabha? [2023]
(1992)

4. Which of the following are true regarding Supreme Court of India? [2023]
A. It's decision are binding on all Courts
B. Can transfer judges of High Courts
C. Can move cases from any court to itself
D. Can deal with cases within the jurisdiction of the state **(A, B, C only)**

02 Indian Polity

Making of the Constituent Assembly

- The Indian National Congress, for the first time, officially called for a Constituent Assembly in 1935. M. N. Roy first gave the idea of Constituent Assembly for India.
- The British government accepted this demand in the 'August Offer' of 1940. Subsequently, 'the Cripps Proposal' on the framing of the Constitution was presented in 1942.
- The Constituent Assembly was established in 1946 as part of the 'Cabinet Mission Plan'.

Its main features were

- The total strength of the Constituent Assembly was 389 members, with 296 allotted to British India and 93 to Princely states.

S. No.	Union Territory	Capital	Lieutenant Governor/ Administrators
6.	Lakshadweep	Kavaratti	Praful Khoda Patel (Administrator)
7.	Puducherry	Pondicherry	K. Kailashnathan (Lieutenant Governor); C.M.: N. Rangaswamy
8.	Ladakh	Leh	Kavinder Gupta

Office	Officer Holder's Name
Chief of Army Staff	Upendra Dwivedi
Chief of Naval Staff	Dinesh Kumar Tripathi
Chief of the Air Staff	Amar Preet Singh
Director, Intelligence Bureau	Tapan Deka
Director, CBI	Praveen Sood
Director-General, BSF	Daljit Singh Chaudhary
Director-General, CRPF	Gyanendra Pratap Singh
Director-General, CISF	Praveer Ranjan
Director-General, ITBP	Praveen Kumar
Director-General, NSG	B. Srinivasan
Director-General, NIA	Sadanand Vasant Date
Director-General, NDRF	Piyush Anand
Chief, R&AW	Parag Jaina

04 Central Cabinet 2025

S. No.	Cabinet Ministers	Portfolio (Up to 2025)
1.	Narendra Modi	Prime Minister of India
2.	Rajnath Singh	Defence
3.	Amit Shah	Home Affairs and Cooperation
4.	Nitin Gadkari	Road Transport and Highways
5.	Jagat Prakash Nadda	Health and Family Welfare; and Chemicals and Fertilizers.
6.	Shivraj Singh Chouhan	Agriculture, Farmers Welfare; and Rural Development.
7.	Nirmala Sitharaman	Finance and Corporate Affairs
8.	S Jaishankar	External Affairs
9.	Manohar Lal Khattar	Housing and Urban Affairs; and Power
10.	H.D. Kumaraswamy	Heavy Industries; and Steel
11.	Piyush Goyal	Commerce and Industry
12.	Dharmendra Pradhan	Education
13.	Jitan Ram Manjhi	Micro, Small and Medium Enterprises.

05 Major Companies and their CEO

S. No.	Company	CEO
1.	Google	Sundar Pichai
2.	Microsoft	Satya Nadella
3.	X Corp. (formerly Twitter)	Vacant (Linda Yaccarino resigned 9 Jul 2025)
4.	IBM	Arvind Krishna
5.	State Bank of India	Challa Sreenivasulu Setty
6.	Axis Bank	Amitabh Chaudhary
7.	HDFC Bank	Sashidhar Jagdishan
8.	Bank of India	Rajneesh Karnatak
9.	Bank of Baroda	Debadatta Chand
10.	ICICI Bank	Sandeep Bakhshi
11.	Apple	Tim Cook
12.	Tesla	Elon Musk
13.	Wipro	Srini Pallia
14.	Infosys	Salil Parekh
15.	TCS	K. Krithivasan
16.	Adobe	Shantanu Narayen
17.	Adani Group	Gautam Adani (Chairman)
18.	JIO	Akash Ambani (Chairman)
19.	Starbucks	Brian Niccol
20.	Amazon	Andy Jassy
21.	Flipkart	Kalyan Krishnamurthy
22.	Mastercard	Michael Miebach
23.	NITI Aayog	Shri B. V. R. Subrahmanyam
24.	SpaceX	Elon Musk

06 Reserve Bank of India

Important RBI Timeline

S. No.	Event	Year
1.	The British passed the RBI Act	1934
2.	Establishment of RBI in Calcutta	1935
3.	The RBI's headquarters was permanently relocated from Calcutta to Bombay.	1937
4.	Reserve Bank of India was nationalized after independence, earlier being privately owned.	1949

10 Time, Distance and Speed

Time

Time is the measure of passing of events from the past, through the present, and into the future. It helps us understand when things happen and how they are connected. It is usually denoted as T and it is usually measured in seconds and hours.

Distance

A path covered by a moving object irrespective of the direction of motion is called distance. It is denoted by D and it is usually measured in meteres, kilometres.

Speed

The rate of distance covered by a moving object in a certain period of time is called the speed of the object. It is denoted by S and it is usually measured in meteres per second, kilometres per hour.

Important Formulae

- Speed $= \dfrac{\text{Distance}}{\text{Time}}$
- Time $= \dfrac{\text{Distance}}{\text{Speed}}$
- Distance = (Speed × Time).
- x km/hr $= \left(x \times \dfrac{5}{18}\right)$ m/sec.
- x m/sec $= \left(x \times \dfrac{18}{5}\right)$ km/hr.

Example 1: An athlete runs 200 meters race in 24 seconds. His speed (in km/hr) is:
(*a*) 20 (*b*) 24 (*c*) 28.5 (*c*) 30

Solution: (*d*) Speed $= \dfrac{\text{Distance}}{\text{Time}} = \dfrac{200}{24}$ m/s $= \dfrac{200}{24} \times \dfrac{18}{5}$ km/hr $= 30$ km/hr

Important Relation Among Time, Distance and Speed

- When Distance is constant then Time and Speed are inversely proportional to each other. *i.e.*, if the ratio of two different Time is $a : b$ then the ratio of the respective Speeds is $b : a$.
- When Time is constant then Distance and Speed are directly proportional to each other. *i.e.*, if the ratio of two different Distances is $a : b$ then the ratio of the respective Speeds is also $a : b$.
- When Speed is constant then Distance and Time are directly proportional to each other. *i.e.*, if the ratio of two different Distances is $a : b$ then the ratio of the respective Time is also $a : b$.

Example 2: A car traveling at a speed of 40 km/hour can complete a journey in 9 hours. How long will it take to travel the same distance at 60 km/hour?
(*a*) 6 hours (*b*) 3 hours (*c*) 5 hours (*d*) 4 hours

Solution: (*a*) Ratio of old speed and new speed = 40 : 60 = 2 : 3
Since, distance is constant.
So, ratio of old time and new time = 3 : 2
$\Rightarrow$ 3 units = 9 hours
$\Rightarrow$ New time = 2 units $= \dfrac{9 \times 2}{3} = 6$ hours

Average Speed

The total distance travelled with all different speeds, divided by the total time is called average speed.

i.e., Average Speed = $\dfrac{\text{Total Distance Covered}}{\text{Total Taken Time}}$

Example 3: One third of a certain journey is covered at the rate of 25 km/hr, one-fourth at the rate of 30 km/hr and the rest at 50 km/hr. The average speed for the whole journey is

(*a*) 35 km/hr (*b*) $33\frac{1}{3}$ km/hr

(*c*) 30 km/hr (*d*) $37\frac{1}{2}$ km/hr

Solution: (*b*) Let the total distance be x km.

$$\text{Total time} = \frac{\frac{x}{3}}{25} + \frac{\frac{x}{4}}{30} + \frac{\frac{5x}{12}}{50} = \frac{x}{75} + \frac{x}{120} + \frac{x}{120}$$

$$= \frac{x}{75} + \frac{x}{60} = \frac{4x + 5x}{300} = \frac{3x}{100} \text{ hours}$$

$$\text{Average speed} = \frac{\text{Total distance}}{\text{Time taken}} = \frac{x}{\frac{3x}{100}} = \frac{100}{3} = 33\frac{1}{3}\text{kmph}$$

Short Trick-1

- If there are two speeds S_1 and S_2 and the distance covered by both the speeds is same then,

Average Speed = $\dfrac{2S_1S_2}{S_1 + S_2}$

Example 4: Suresh covers a distance by a cycle at 10 km/h. He returns to the starting point in a car at a speed of 50 km/h. Find the average speed for the entire journey.

(*a*) 36.66 km/h (*b*) 16.66 km/h

(*c*) 26.66 km/h (*d*) 46.66 km/h

Solution: (*b*) We have, S_1 = 10 km/h, S_2 = 50 km/h and distance is constant.
So, average speed for the entire journey

$$= \frac{2S_1S_2}{S_1 + S_2} = \frac{2 \times 10 \times 50}{10 + 50} = \frac{1000}{60} = 16.66 \text{ km/h}$$

Short Trick-2

- A person goes to a destination at a speed of S_1 km/hr and returns to his place at a speed of S_2 km/hr. If he takes T hours in all, the distance between his place and destination is $\left(\dfrac{S_1S_2}{S_1 + S_2} \times T\right)$ km .

Example 5: A man rode out a certain distance by train at the rate of 120 kmph and walked back at the rate of 5 kmph. The whole journey took 10 hrs. What distance did he ride?

(*a*) 24 km (*b*) 48 km (*c*) 12 km (*d*) 36 km

Example 7: A train 180 m long moving at the speed of 20 m/sec over-takes a man moving at speed of 10 m/sec in the same direction. The train passes the man in how much time?

(*a*) 6 sec (*b*) 9 sec (*c*) 18 sec (*d*) 27 sec

Solution: (*c*) Time taken by train to pass the man

$$= \frac{\text{Length of the train}}{\text{Speed of the train} - \text{Speed of the man}} = \frac{180}{20-10} = 18 \text{ sec}$$

Important Concepts for Boat and Stream Related Problems

Let speed of a boat in still water is v and speed of the stream of the river is u then

Downsteam speed = Speed of the boat in the direction of the stream = $v + u$

Upstream Speed = Speed of the boat in the opposite direction of the stream = $v - u$

$$\text{Speed of the boat in still water} = \frac{\text{Downsteam Speed} + \text{Upstream Speed}}{2}$$

$$\text{Speed of the stream} = \frac{\text{Downsteam Speed} - \text{Upstream Speed}}{2}$$

Example 8: A boat goes 40 km upstream in 8 hours and 36 km downstream in 6 hours. The speed of the boat in still water is:

(*a*) 6.5 km/hr (*b*) 5.5 km/hr (*c*) 6 km/hr (*d*) 5 km/hr

Solution: (*b*) Upstream speed, $x = \frac{40}{8} = 5$ kmph

Downstream speed, $y = \frac{36}{6} = 6$ kmph

$\therefore$ Speed of boat in still water $= \frac{x+y}{2} = \frac{5+6}{2} = 5.5$ km/h

Exercise

1. Ram took 15 minutes 30 seconds to reach his friend's house which is 900 meters away. The speed of Ram (in km/h) is (correct to two decimal places) **(CUET 2023)**

   (*a*) 3.48 (*b*) 4.48

   (*c*) 34.80 (*d*) 13.48

2. Two boys *A* and *B* start at the same time to ride from Delhi to Meerut, 60 km away. *A* rides 4 km/h slower than *B*. *B* reaches Meerut and at once turns back meeting *A* at a place 12 km from Meerut. Find the speed of *A*. **(CUET 2023)**

   (*a*) 6 km/h (*b*) 8 km/h

   (*c*) 12 km/h (*d*) 4 km/h

3. A thief is noticed by a policeman from a distance of 200 m. The thief starts running and the policeman chases him. The thief and the policeman run at the speed of 10 km/h and 11 km/h respectively. What is the distance between them after 6 minutes? **(CUET 2023)**

   (*a*) 100 m (*b*) 150 m

   (*c*) 190 m (*d*) 120 m

4. The speed of a train is 88 km/h. How much time will it take to cross a 180 m long platform if length of the train is 150 m? **(CUET 2023)**

   (*a*) $11\frac{1}{2}s$ (*b*) $10\frac{1}{2}s$

   (*c*) $13\frac{1}{2}s$ (*d*) $14\frac{1}{2}s$

5. A 110 m long train takes 3 seconds to pass a pole. How long is the platform if the train passes it in 15 seconds? **(CUET 2023)**

1 Mock Test

Instructions

Attempt only 50 questions out of the given 50 questions. Each question carries 5 marks. 1 mark will be deducted for a wrong answer.

Full Marks: 250 ***(Time: 60 Minutes)***

1. Introducing a boy, a girl said, "He is the son of the daughter of the father of my uncle." How is the boy related to the girl?

(*a*) Brother
(*b*) Nephew
(*c*) Uncle
(*d*) Son-in-law

2. Select the correct mirror image of the given figure when the mirror is placed at MN as shown below.

6 Z k B M V d
M ——— N

(*a*) 
(*b*) 
(*c*) 
(*d*) 

3. 1, 3, 9, 27, 81?

(*a*) 216 (*b*) 220
(*c*) 243 (*d*) 250

4. Arrange the following words as per order in the dictionary?

(i) Tortoise (ii) Torrid
(iii) Torso (iv) Torque
(v) Tortuous

(*a*) (iv), (ii), (iii), (i), (v)
(*b*) (iii), (ii), (iv), (i), (v)
(*c*) (ii), (iii), (iv), (v), (i)
(*d*) (iv), (iii), (ii), (i), (v)

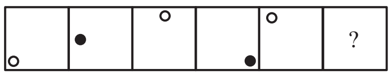
5. Which scheme did Prime Minister Narendra Modi launch in 2025?

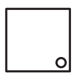
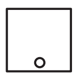
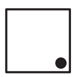
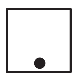
(*a*) PM Kisan Samman Nidhi
(*b*) PM Dhan Dhaanya Krishi Yojana and Mission for Aatmanirbharta in Pulses
(*c*) Mission Shakti Scheme
(*d*) National Food Security Scheme

6. A clock is set right at 5 a.m. The clock loses 16 minutes in 24 hours. What will be the true time when the clock indicates 10 p.m. on the 4th day?

(*a*) 11 p.m. (*b*) 10 p.m.
(*c*) 9 p.m. (*d*) 8 p.m.

7. Select the figure form among the given options that can replace the question mark(?) in the following series.

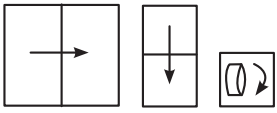


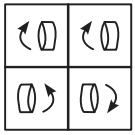
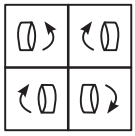
(*a*) 
(*b*) 
(*c*) 
(*d*) 

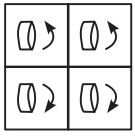
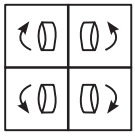
8. One morning after sunrise, Suresh was standing facing a pole. The shadow of the pole fell exactly to his right. To which direction was he facing?

(*a*) East
(*b*) West
(*c*) South
(*d*) Data is inadequate

9. A paper is folded and cut as shown below. How will it appear when unfolded?



(*a*)  (*b*) 

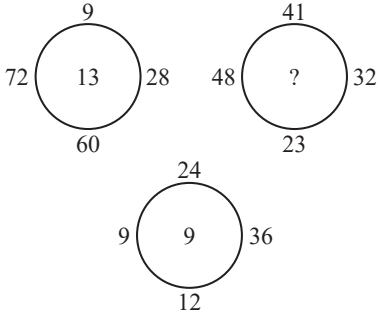
(*c*)  (*d*) 

10. In a certain code, TRIPPLE is written as SQHOOKD. How is DISPOSE written in that code?

(*a*) CHRONRD (*b*) CHORNDR

(*c*) CHRORND (*d*) CRHORND

11.



(*a*) 12 (*b*) 15

(*c*) 17 (*d*) 18

12. A boatman goes 2 km against the current of the stream in 1 hour and goes 1 km along the current in 10 minutes. How long will it take to go 5 km in stationary water?

(*a*) 40 minutes (*b*) 1 hour

(*c*) 1 hr 15 min (*d*) 1 hr 30 min

13. Due to 50% increase in the price of rice Aman purchased 5 kg less rice with the same amount of Rs 60. What is the new price of rice?

(*a*) Rs 4.66 (*b*) Rs 5

(*c*) Rs 4 (*d*) Rs 6

14. Who was awarded the Nobel Prize in Physics for the year 2025?

(*a*) Albert Fert, Peter Higgs, and John Pendry

(*b*) John Clarke, Michel H. Devoret, and John M. Martinis

(*c*) Stephen Hawking, Roger Penrose, and James Peebles

(*d*) Stephen Hawking, Roger Penrose, and James Peebles

15. By selling a water heater for Rs. 3200, the shopkeeper incurs a loss of 20%. If he wants to earn a profit of 20%, at what price should he sell the water heater?

(*a*) Rs. 4000 (*b*) Rs. 4200

(*c*) Rs. 4800 (*d*) Rs. 5760

16. How much time did X take to reach the destination?

I. The ratio between the speed of X and Y is 3:4.

II. Y takes 36 minutes to reach the same destination.

(*a*) I alone sufficient while II alone not sufficient to answer

(*b*) II alone sufficient while I alone not sufficient to answer

(*c*) Either I or II alone sufficient to answer

(*d*) Both I and II are necessary to answer

17. Which organization constructed the world's highest motorable road at Mig La Pass in 2025?

(*a*) Indian Army

(*b*) BSF

(*c*) Border Roads Organisation (BRO)

(*d*) Indian Air Force

18. Find the area of trapezium whose parallel sides are 20 cm and 18 cm long, and the distance between them is 15 cm.

(*a*) 225 cm^2 (*b*) 275 cm^2

(*c*) 285 cm^2 (*d*) 315 cm^2

19. What is the L.C.M. of 25, 30, 35 and 40?

(*a*) 3800 (*b*) 4200

(*c*) 4400 (*d*) 3200

20. A tap can fill a tank in 6 hours. After half the tank is filled, three more similar taps are opened. What is the total time taken to fill the tank completely?

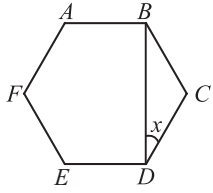
(*a*) 3 hrs 15 min (*b*) 3 hrs 45 min

(*c*) 4 hrs (*d*) 4 hrs 15 min

Find the ratio of the number of girls in 3-8 age group and the number of boys in 21-24 age group combined to the total number of students in 9-15 age group.

(*a*) 4 : 7 (*b*) 11 : 10
(*c*) 4 : 3 (*d*) 10 : 11

43. Shown below is a regular hexagon ABCDEF.



Calculate angle x.

(*a*) 30° (*b*) 120°
(*c*) 60° (*d*) 80°

44. In a mixture of 75 litres, the ratio of milk to water is 2 : 1. The amount of water to be further added to the mixture so as to make the ratio of the milk to water 1 : 2 will be

(*a*) 45 litres (*b*) 60 litres
(*c*) 75 litres (*d*) 80 litres

45. Which of the following is inducted in the list of world heritage sites of UNESCO?

(*a*) Lake Chilka
(*b*) Dal Lake
(*c*) Nagin Lake
(*d*) Sundarban National Park

46. Kullu Valley is located between which of the following mountain ranges?

(*a*) Ladakh and Pir Panjal
(*b*) Lesser Himalaya and Shivalik
(*c*) Dhauladhar and Pir Panjal
(*d*) Ranjoti and Nanga Parbat

47. The heat in the environment mainly comes from:

(*a*) Insolation (*b*) Condensation
(*c*) Radiation (*d*) Convection

48. Largest gland of human body is:

(*a*) Adrenal gland (*b*) Liver
(*c*) Pituitary gland (*d*) Kidney

49. Which ancient city of the Indus Valley Civilization was famous for its dockyard?

(*a*) Harappa (*b*) Mohenjo-Daro
(*c*) Lothal (*d*) Kalibangan

50. Which Indian founded the Natal Indian Congress (NIC)?

(*a*) Mahatma Gandhi
(*b*) Jawaharlal Nehru
(*c*) Dadabhai Naoroji
(*d*) Gopal Krishna Gokhale

Answer Keys

1. (*a*)	**2.** (*d*)	**3.** (*c*)	**4.** (*a*)	**5.** (*b*)	**6.** (*a*)	**7.** (*d*)	**8.** (*c*)	**9.** (*d*)	**10.** (*a*)
11. (*a*)	**12.** (*c*)	**13.** (*d*)	**14.** (*b*)	**15.** (*c*)	**16.** (*d*)	**17.** (*c*)	**18.** (*c*)	**19.** (*b*)	**20.** (*b*)
21. (*a*)	**22.** (*d*)	**23.** (*a*)	**24.** (*b*)	**25.** (*c*)	**26.** (*b*)	**27.** (*b*)	**28.** (*b*)	**29.** (*d*)	**30.** (*b*)
31. (*d*)	**32.** (*c*)	**33.** (*b*)	**34.** (*d*)	**35.** (*a*)	**36.** (*d*)	**37.** (*c*)	**38.** (*b*)	**39.** (*c*)	**40.** (*c*)
41. (*b*)	**42.** (*b*)	**43.** (*a*)	**44.** (*c*)	**45.** (*d*)	**46.** (*c*)	**47.** (*c*)	**48.** (*b*)	**49.** (*c*)	**50.** (*a*)

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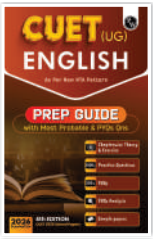
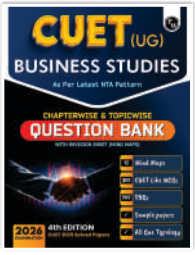
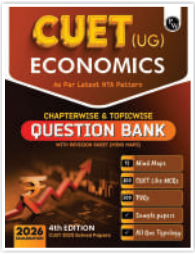
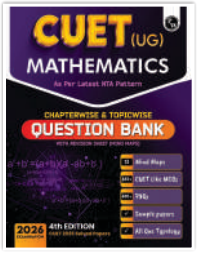
For Detailed Explanations

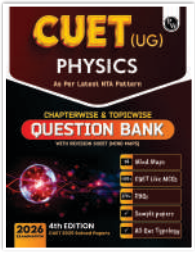
Complete Your Preparation

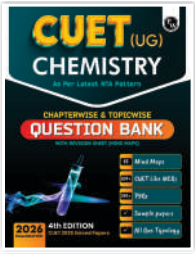


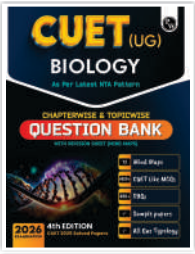


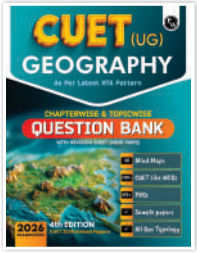


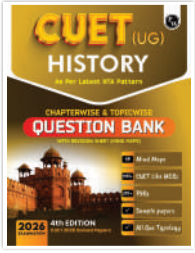


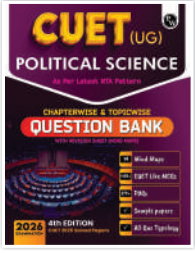


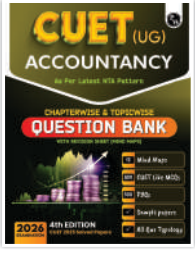












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