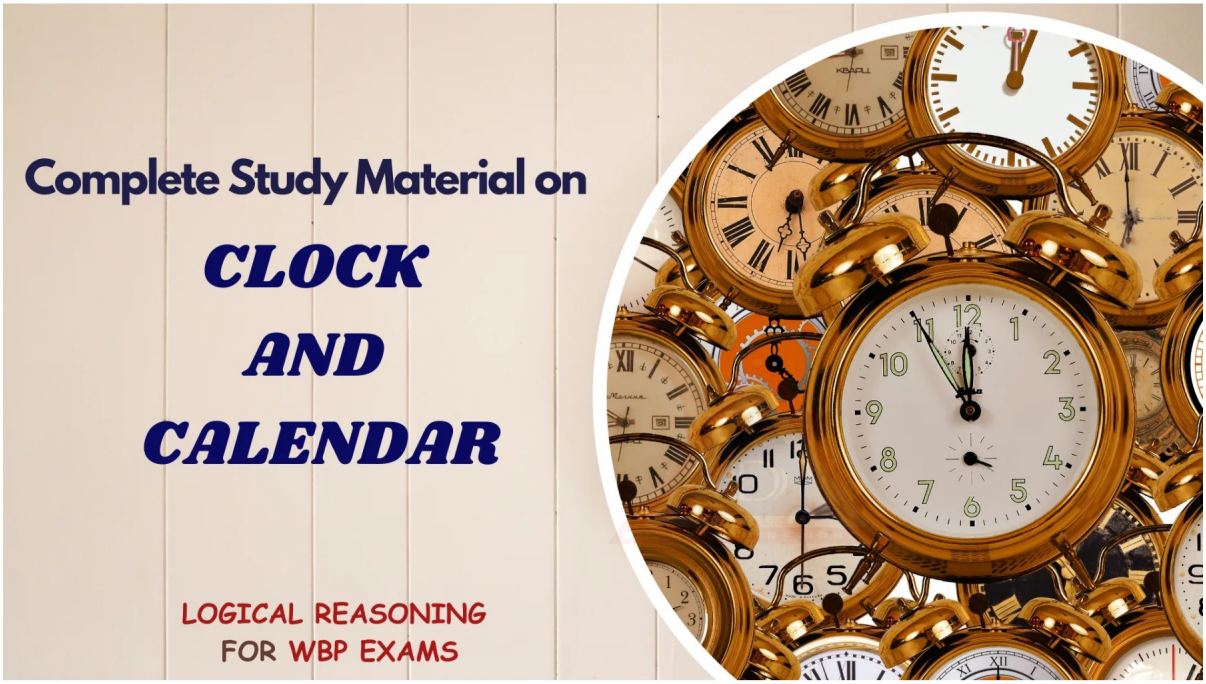
Clock and Calendar - Reasoning Concepts for WBP Exams

For those with a passion for upholding the law and ensuring the safety of their community, the West Bengal Police (WBP) exams serve as a gateway to a fulfilling career in law enforcement. The selection process for the WBP exams is known for its rigor and comprehensiveness, demanding a well-rounded skill set, including proficiency in reasoning. Among the myriad reasoning topics, "Clock and Calendar" emerges as an indispensable component.



[Source: The Dhronas]

This blog is thoughtfully designed to be your ultimate resource for mastering Clock and Calendar, a topic that can be a game-changer in your WBP exam preparation. We will break down the meaning of Clock and Calendar, explore its various types with examples, and provide a comprehensive guide to help you become proficient in this area. Acknowledging that practice is the foundation of proficiency, we have included an array of practice questions to sharpen your Clock and Calendar skills. By the end of this blog, you'll be well-prepared to tackle Clock and Calendar-related questions with confidence and precision, thus increasing your prospects of excelling in the West Bengal Police exams.

Let's embark on this journey together and pave the way for your success!

The Concept of Clock

Clock has two types of hands i.e. Hour Hand and Minute Hand. Minute Hand is the longer hand in the clock, whereas Hour Hand is the shorter hand.

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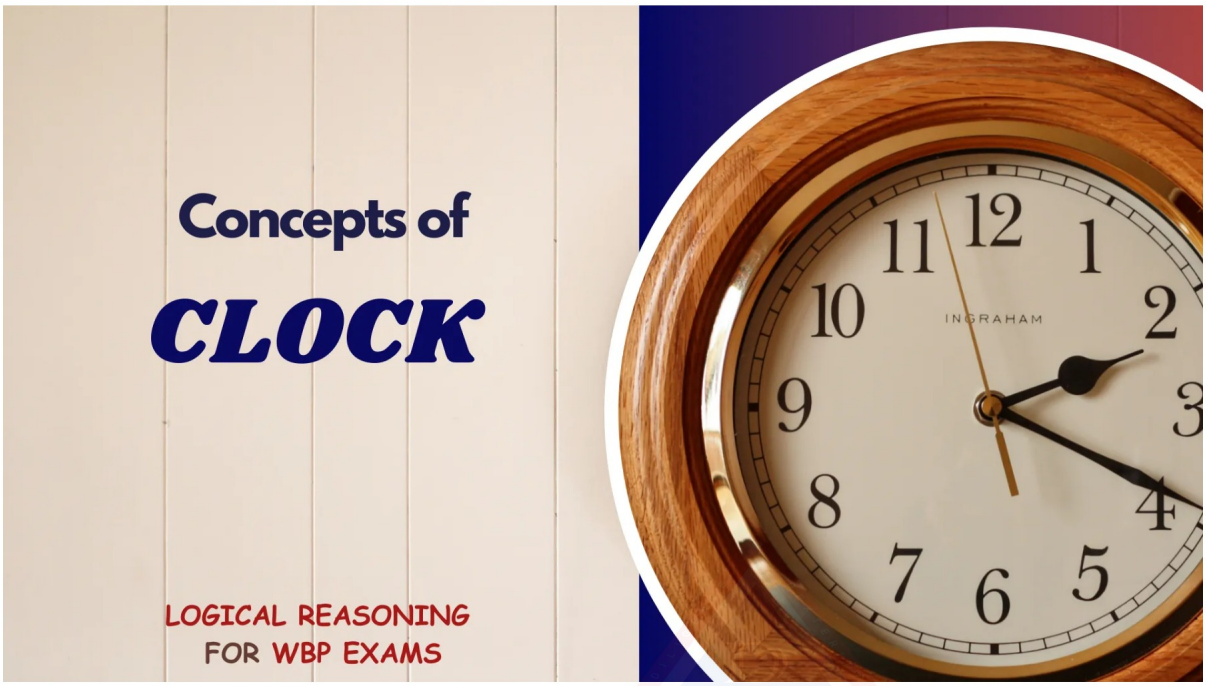

[Source: The Dhronas]

First, we all should know the basics of Clock:

As we know, Clock is in circle shape, so it covers 360° in angle.

1. In an hour, a minute hand covers a complete circle or 12 spaces.
12 Spaces = 360°
1 Space = 30°
(1 Space = 5 minutes)
1 Minute = 6°
Therefore, a minute hand cover 6° angle in a minute.

2. In an hour, a hour hand covers 1 space.
1 hour = 1 space
60 minutes = 1 space
60 minutes = 30°
1 minute = 1/2°
Therefore, an hour hand cover 1/2° angle in a minute.

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3. Angle formation between Hour Hand and Minute Hand.
30H - 11M ÷ 2 (H = Hours, M = Minutes)

4. When both the hands of a clock are in opposite direction to each other, as they are in gap of 30 minutes with each other, and they make 180º . This situation occurs:

5. When both the hands of a clock make 0º it is known as coincident or overlapping. This situation occurs:

Note: Overlapping between 12 and 1 is not possible.

6. When both the hands of a clock make right angle, as they are in gap of 15 minutes with each other, and they make 90º .

Note: Between 2 and 3, 3 and 4, one right angle is common.

Example: What will be the angle between the hour and minute hands of the clock at 8:30?

1.75° 2.85° 3.105° 4.65°

Solution: (1) 75°
The given question is to find the angle between the hour and minute hands of the clock at 8:30.
Angle = [(30 × H) - (11 ÷ 2 × M)], (H = Hour, M = Minutes)
Given time: 8:30
H = 8, M = 30
Angle = [(30 × 8) - (11 ÷ 2 × 30)] = 240 - 165 = 75°

The Concept of Calendar

Calendar is the chapter of Logical Reasoning. Aspirants can score easily from questions of this chapter. Aspirants must learn all the concepts and formulas to ace this topic.

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In Calendar two types of years are important and used.
1. Ordinary Year: Ordinary year is the year in which February has 28 days, and there is 52 weeks + 1 day.
2. Leap Year: Leap year is the year in which February has 29 days, and there is 52 weeks + 2 days.

In 100 years, there is 76 Ordinary Years, and 24 Leap Years.
Now there is odd days in weeks, years, but what is odd days exactly?
Odd Days When total number of days is divided by 7, then the remainder is called odd days.
In Ordinary year: There is 1 odd days.
In Leap year: There is 2 odd days.
In 100 years: There is 76 Ordinary years and 24 Leap Years, which makes 76 odd days, and 48 odd days in ordinary year and leap year respectively.
Therefore, Total Odd days in 100 years = 76 + 48 / 7 = 5 Odd days.
Odd days in 100 years = 5
Odd days in 200 years = 10 = 3 odd days
Odd days in 300 years = 15 = 1 odd day
Odd days in 400 years = 21 = 0 odd days.
(As 400 year is a century year and also a leap year, so 1 day increased in this).

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Important Note:

- A year other than century year, divisible by 4 is called Leap Year.
- A century year divisible completely by 400 is called Leap Century.

Number of odd days in Months:

Week Days Codes:

Example: How many odd days are there from 2002 to 200 year?

1.9 2.8 3.6 4.7

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Solution: (1) 9
We know that, Months Calculation Odd Days
In an ordinary year, there are 365 days and on dividing 365 by 7,
We get remainder = 1 so this extra one day is taken as an odd day.
Similarly, in a leap year, there are 366 days and on dividing 366 by 7,
We get remainder = 2 so these extra days are taken as the odd days.
Thus, the remainder, which we get after dividing the number of days by 7 is considered as odd days.
From 2002 to 2008 years,
The number of odd days in 2002 = 1 (Non-leap year)
The number of odd days in 2003 = 1 (Non-leap year)
The number of odd days in 2004 = 2 (leap year)
The number of odd days in 2005 = 1 (Non-leap year)
The number of odd days in 2006 = 1 (Non-leap year)
The number of odd days in 2007 = 1 (Non-leap year)
The number of odd days in 2008 = 2 (leap year)
Total = 1 + 1 + 2 + 1 + 1 + 1 + 2 = 9 odd days.

Clock and Calendar Practice Questions

Q:1 What is the measure of the smaller of the two angles formed between the hour hand and the minute hand of a clock when it is 5 : 49 p.m.?

1.119º

2.119.5º

3.120º

4.120.5º

Q:2 3rd January 2018 was a Wednesday. Which of the following years will also have 3rd January on a Wednesday?

1.2020

2.2024

3.2023

4.2022

Q:3 Sita told her friend Gita "I am leaving today and will reach Mumbai tomorrow for my exams starting the day after tomorrow, which is Friday". What day is tomorrow in this conversation? [

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1.Wednesday

2.Thursday

3.Tuesday

4.Saturday

Q:4 If 21st June 2007 was a Thursday, then what was the day of the week on 21st June 2011?

1.Wednesday

2.Monday

3.Sunday

4.Tuesday

Solutions of Clock and Calendar Practice Questions

Q:1 (2) We know the direct formula for the angle between the hour and minute hand of the clock: = (11/2) × M – 30 × H
M is for minutes and H is for Hours
Given time: 5 : 49
H = 5 and M = 49
Hence, Angle = (11/2) × 49 – 30 × 5 = 269.5 – 150 = 119.5º

Q:2 (2) Logic: When we proceed forward by one year, then 1 day is gained and vice versa.
When we proceed forward by one leap year, then 2 days are gained and vice versa.
If any year is divided by 4 without any reminder then that year is known as a leap year.
2018/4 = 504 and the remainder is 2. So this year is not a leap year.
2018 is not a leap year, so the 3rd of January 2018 is Wednesday.
2019: 3 January = Thursday,
2020: leap year, so 3 January = Friday,
2021: 3 January = Sunday,
2022: 3 January = Monday,
2023: 3 January = Tuesday,
2024: leap year, so 3 January = Wednesday.
Thus 3rd January 2024 is a Wednesday.

Q:3 (2) Sita told her friend Gita "I am leaving today and will reach Mumbai tomorrow for my exams starting the day after tomorrow, which is Friday"
Day after tomorrow is Friday. So, tomorrow will be 'Thursday'.

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Q:4 (4) No. of odd days from 21st June 2007 to 21st June 2008 = 2
No. of odd days from 21st June 2008 to 21st June 2009 = 1
No. of odd days from 21st June 2009 to 21st June 2010 = 1
No. of odd days from 21st June 2010 to 21st June 2011 = 1
Total number of odd days = 2 + 1 + 1 + 1 = 5
The day of the week on 21st June 2011 = The day of the week on 21st June 2007 + 5 days = Thursday + 5 days = Tuesday

As we bring this exploration of Clock and Calendar for the West Bengal Police (WBP) exams to a close, it's essential to reflect on the knowledge and skills we've uncovered. Clock and Calendar reasoning is more than just another topic in your exam preparation; it's a critical component of your reasoning toolkit that can significantly impact your performance in these challenging exams. I hope this blog has provided you with the understanding and confidence needed to tackle Clock and Calendar related questions effectively, and I encourage you to continue honing your skills in this area.

Your feedback and experiences matter to us. Was this blog beneficial in your WBP exam preparation? How did you perform on the practice questions provided? We invite you to share your thoughts and insights in the comment section below. Remember, The Dhronas is your ultimate resource for comprehensive study material and practice questions on various reasoning topics tailored to help you excel in the WBP exams. So, stay engaged, keep visiting, and continue your journey towards success in the West Bengal Police exams. Your dedication and hard work will undoubtedly lead you to your desired destination.

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