

JSSC

JHARKHAND STAFF SELECTION COMMISSION

JHARKHAND DIPLOMA LEVEL COMBINED
COMPETITIVE EXAMINATION

JDLCCCE-2023

JUNIOR ENGINEER

General Knowledge

with special reference to Jharkhand

Comprehensive Theory
with Practice Questions





MADE EASY Publications Pvt. Ltd.

Corporate Office: 44-A/4, Kalu Sarai, New Delhi-110016 | **Ph. :** 9021300500

E-mail: infomep@madeeasy.in | **Web:** www.madeeasypublications.org

General Knowledge *with special reference to JHARKHAND* **Jharkhand Diploma Level Combined Competitive Examination (JDLCCE), 2023**

© Copyright, by MADE EASY Publications Pvt. Ltd.

All rights are reserved. No part of this publication may be reproduced, stored in or introduced into a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise), without the prior written permission of the above mentioned publisher of this book.

First Edition: 2023

MADE EASY PUBLICATIONS PVT. LTD. has taken due care in collecting the data and providing the solutions, before publishing this book. In spite of this, if any inaccuracy or printing error occurs then MADE EASY PUBLICATIONS PVT. LTD. owes no responsibility. MADE EASY PUBLICATIONS PVT. LTD. will be grateful if you could point out any such error. Your suggestions will be appreciated.

© All rights reserved by MADE EASY PUBLICATIONS Pvt. Ltd. No part of this book may be reproduced or utilized in any form without the written permission from the publisher.

CHAPTER ► 01

History and Culture of India..... 01-74**Ancient India**

Prehistoric Period.....	2
Indus Valley Civilization.....	2
Vedic Period.....	5
Important Features of Vedic Period.....	7
Evolution of Jainism and Buddhism.....	9
Buddhism & Jainism.....	9
Janpadas & Mahajanpadas.....	12
The Magadhan Empire.....	13
Dynasties of Ancient India.....	13
The Pre-Gupta Period.....	15
Ancient South India.....	16
The Gupta Empire.....	18
The Post Gupta Period.....	20

Medieval India

Early Medieval India.....	20
Pre-sultanate period.....	21
The Delhi Sultanate.....	21
Vijayanagar Empire.....	25
Bahmani Kingdom.....	26
The Mughal Period.....	26
Sur Dynasty.....	29
Later Mughal Age.....	30
The Marathas.....	31

Modern India

Advent of European Companies.....	32
English East India Company.....	32
The revolt of 1857.....	37
Popular Movements against British Rule.....	38

Governors-General of India.....	41
Viceroy of India.....	42
Important Events.....	44
Indian National Movement.....	44
Gandhian Phase (1917-1947).....	45
Art and Culture.....	52
World History.....	59
Ancient World.....	59
Medieval World.....	61
Modern World.....	62
Practice Questions.....	68-74

CHAPTER ► 02

Geography.....75-180

Latitude.....	75
Longitude.....	75
International Date Line.....	76
Motions of Earth.....	76
Structure of Earth.....	76
Formation of Continents.....	77
India: General Facts.....	80
Physiographic Divisions of India.....	83
Drainage System of India.....	88
Lakes.....	91
Characteristics of Indian Monsoon.....	93
Climate of India.....	93
Soils of India.....	95
Forests of India.....	97
Industry in India.....	105
Agriculture in India.....	109
Minerals in India.....	113
Transport & Communication.....	121
World General Facts.....	125

World: Physical	126
Australia	135
World: Climatic Regions	137
Oceans	147
Currents of North Atlantic Ocean	148
Currents of South Atlantic Ocean	148
Currents of North Pacific Ocean	149
Current of South Pacific Ocean	150
Currents of North Indian Ocean	150
Currents of South Indian Ocean	150
Major Fishing Grounds of the World	151
Atmosphere	154
World: Mineral Resources	160
World: Major Industries	167
Glossary of Geographical Terms	173
Practice Questions	175-180

CHAPTER ► 03

Indian Polity..... 181-234

Constitutional Developments	181
Important British Acts of Constitutional Significance ..	181
Features of Constitution	184
The Preamble	190
The Union & its Territory	191
Citizenship	192
Fundamental Rights	192
Fundamental Duties	196
Systems of Government	197
The Union Executive	199
The parliament	203
The State Executive	211
State Legislature	212
Local Government	215
Union Territories	216
Scheduled & Tribal Areas	216
Centre - States Relations	217
Jammu & Kashmir Reorganization Bill, 2019	219
Judiciary in India	220
Constitutional, Statutory & Extra-Constitutional Bodies	224
Practice Questions	229-234

CHAPTER ► 04

Indian Economy 235-254

Indian Economy	235
Introduction	235

National Income	235
Money & Banking	236
Financial Market	239
Planning	243
Public Finance & Taxation	245
Poverty in India	247
New Economic Policy, 1991	248
Statistical Organisations	248
Unemployment	248
Union Budget	249
Economics	250
Important Terms used in Economics	250
Practice Questions	252-254

CHAPTER ► 05

Environmental Issues..... 255-314

Introduction	255
Biosphere	255
Ecosystem	256
Ecology	267
Biome	268
Indian Organisations & Legislations for Conservation of Environment	269
Events/International Days related to Environment	270
Biodiversity Hotspots	272
Biodiversity Protected Areas	275
Wetlands	278
Mangroves	279
Conservation of Biodiversity	280
International Conventions/ Organisations on Biodiversity	281
Legislative Steps taken by Union Government to conserve Biodiversity	284
Wildlife Conservation Projects in India	285
Pollution	288
Air Pollution	288
Water Pollution	293
Soil Pollution	298
Noise Pollution	299
Bio Pollution	300
Radiation Pollution	301

Ozone Layer Depletion	302
Hazardous Wastes	303
Environmental Laws for Controlling Pollution in India	304
Climate Change	305
Greenhouse Gases	305
Global Warming	307
International Conventions/Policies on Climate Change	308
National Action Plan on Climate Change	311
Practice Questions.....	312-314

CHAPTER ► 06

General Knowledge..... 315-376

National Symbols	315
First Among Indians	318
Largest, Longest, Highest in the World	322
Major Countries: Their Capital, Area & Currency	325
Awards & Honours	328
Youth and Sport	335
Sports Awards.....	335
Games	335
Flagship schemes of Union Government	340
International Organizations	345
Miscellaneous	354
Practice Questions.....	372-376

CHAPTER ► 07

Defence and Science & Technology 377-424

Indian Institutions in Science and Technology	377
Space Technology	388
Telescopes & Observatories	391
Defence	393
Ministry of Defence (MoD)	393
Defence Research and Development Organization	397
Bio-Technology	409
Nuclear Technology	411
Innovations.....	414
Intellectual Property Rights	416
Technological Inventions.....	418
The Solar System	419
Practice Questions.....	422-424

CHAPTER ► 08

General Studies specific to Jharkhand.....425-494

General Studies specific to Jharkhand	425
State Symbols of Jharkhand	429
History of Jharkhand	430
Geography of Jharkhand	446
Polity of Jharkhand	465
General Knowledge of Jharkhand.....	474-494

SECTION

B

General Science

495-636

CHAPTER ► 01

Physics 495-526

Unit & Measurement	496
Motion	497
Work, Power and Energy.....	500
Pressure.....	502
Gravitation.....	503
Properties of Matter.....	504
Simple Harmonic Motion	505
Sound	506

Optics	507
Heat and Thermodynamics.....	513
Electronics	515
Electrostatics	516
Electricity	516
Magnetism	518
Atomic Physics	519
Surface Tension	521
Viscosity.....	521
Flotation	522
Practice Questions.....	523-526

CHAPTER ► 02

Chemistry..... 527-580

Matter.....	527
Atoms and Molecules	528
Radioactivity	533
Chemical Reactions	535
Chemical Bonding	536
Catalysis	537
Acids, Bases and Salts	538
Solution	542
Gas Laws.....	543
Metals and Metallurgy.....	548
Non-Metals & their Properties	554
Carbon and its Compound.....	559
Organic Compounds	562
Classification of Organic Compounds	564
Important Organic Compounds	567
Plastic & Rubber	571

Explosives and Cosmetics	573
Periodic Table	574
Practice Questions.....	577-580

CHAPTER ► 03

Biology..... 581-636

Basics of Biology	581
The Cell.....	583
Nutrition	586
Digestive System	594
Bones, Joints and Muscles	597
Respiratory System.....	599
Circulatory System.....	601
Integumentary System	607
Glandular System.....	609
Nervous System	614
Sensory Organs	617
Human Reproductive System.....	619
Human Diseases.....	623
Practice Questions.....	633-636

SECTION

C

Basics of Computers

637-654

Basics of Computer 637-654

Computer	638
Types of Computers	638
Software	639
Programming Languages	640
Input & Output Devices.....	640
Input Devices	640
Output Devices	641
Database Management System (DBMS).....	641
Memory	643
Computer Memory	643
Computer Networks	644

Network Topology	644
Communication System	646
Internet Protocol.....	647
Masking	647
Router	647
Firewall.....	648
Network Security.....	648
Cryptography.....	648
Operating System	648
Microsoft Windows.....	649
Internet.....	650
Web Browser.....	651
Practice Questions.....	652-654

GENERAL KNOWLEDGE

SECTION

A

Jharkhand Diploma Level
Combined Competitive
Examination

JDLCCE-2023

JUNIOR ENGINEER

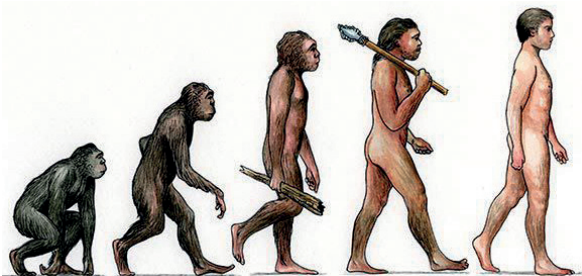


HISTORY AND CULTURE OF INDIA

Ancient India

PREHISTORIC PERIOD

- The early prehistoric period was observed before the 8th millennium BCE.
- The period of the prehistoric agriculturalists and pastoralists was during approximately the 8th to the mid-fourth millennium BCE.



Period/ Age	Remarks
Paleolithic Age	<ul style="list-style-type: none"> People in Paleolithic age were dependent on hunting for their livelihood and used to travel from one place to another depending on the availability of natural resources for survival. They developed sharp weapons of stone for hunting purpose.
Mesolithic Age	<ul style="list-style-type: none"> During Mesolithic age, people were still hunter-gatherers, but were possibly starting to stay in one place. Domestication of animals can be seen in this age.
Neolithic Age	<ul style="list-style-type: none"> During Neolithic age, stone tools and weapons were also further modified and were sharpened by fine shedding of the stones. It also contributed greatly in the field of transportation by an important invention of the wheel.
Chalcolithic Age	<ul style="list-style-type: none"> The people of Chalcolithic age practiced agriculture. They used tools made up of copper and stone. Painted pottery was the most distinguishing feature of all Chalcolithic cultures.

INDUS VALLEY CIVILIZATION

- Indus Valley Civilization is one of the oldest civilizations of the world. It flourished around the Indus river and its tributaries. The area consists of modern Pakistan and Northwestern India. Mohenjodaro is the largest site of the Civilization.
- Indus valley civilization is also called as Harappan civilization because Harappa was the first site to be excavated in 1921 under the supervision of **Daya Ram Sahni**.
- The known extent of this civilization in the west is upto Sutkagendor in Baluchistan; Alamgirpur (UP) in the east; Daimabad (Maharashtra) in South; and Manda (J and K) in the north.
- This civilization belongs to Bronze Age/ Chalcolithic Age. Hence, it is also called Bronze Age civilization.
- Contemporary civilizations of Harappan civilization are Mesopotamian or Sumerian civilization, Egyptian civilization and Chinese civilization.
- John Marshall was the first scholar to use the term "Indus Valley Civilization".

Important Sites of Harappan Civilization

1. Harappa

- People of Harappa knew the process of making tarcoal.
- Main gate for the entry in the houses of Harappa was in the north direction.
- R-37 cemetery have been found here.
- Terracotta figurine of Mother Goddess have been found here.

2. Mohenjo-daro

- Mohenjo-daro was discovered in 1922 under the supervision of **R.D. Bannerji**.
- The literal meaning of Mohenjo-daro in Sindhi language is **mound of the dead**.

- The Great Bath, a granary, big halls, a bronze statue of a dancing girl, idol of a yogi and numerous seals have been found here.
- Seven layers of Mohenjo-daro city directs that the city was destroyed and rebuilt seven times.

3. Lothal

- In 1954, Lothal was discovered by S.R. Rao in Gulf of Cambay in Gujarat.
- Red & black clay pots, copper tools, brick built tank like structure, a bead making factory and a seal from Iran have been found at Lothal.
- Linear scale of bronze have been found here.
- A dockyard has been found at Lothal.

4. Kalibangan

- Kalibangan was discovered in 1953. It is located in upper Rajasthan.
- It did not have a drainage system.
- A number of firepits *agnikundas* (firepits) have been found here.
- It saw two cultural phases viz. pre-Harappan and Harappan.
- A ploughed field have been found here.

5. Dholavira

- Dholavira in Gujarat was discovered in 1992 by J.P. Joshi.
- Dholavira shows all the three phases of Harappan civilization.
- A script consists of big alphabets has been found on a gate in Dholavira.



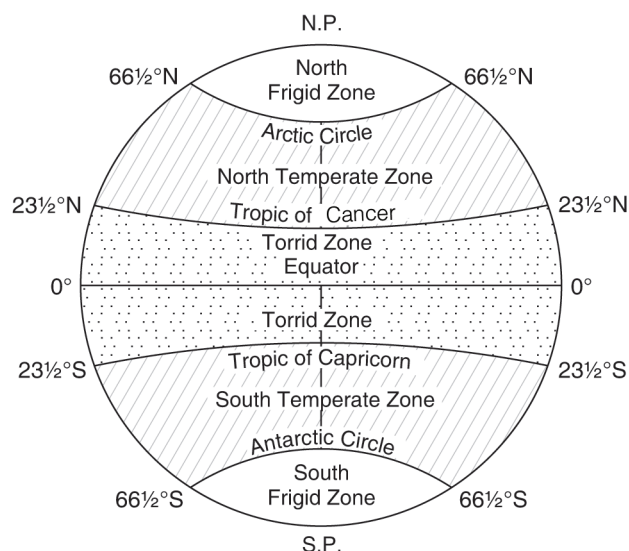
Major Harappan Sites and their Excavators					
Site	River	District	Province/ State	Country	Excavators
Harappa	Ravi	Sahiwal	Punjab	Pakistan	Daya Ram Sahni (1921), Madho Swaroop Vatsa (1926), Wheeler (1946)
Mohenjodaro	Indus	Larkana	Sindh	Pakistan	Rakhal Das Bannerji (1922), Mackay (1927), Wheeler (1930)
Chanhudaro	Indus	Nawabshah	Sindh	Pakistan	Mackay (1925), N.G. Mazumdar (1931)
Lothal	Sabarmati & Bhogva	Ahmedabad	Gujarat	India	S.R. Rao (1954)
Kalibangan (i.e., the bangles of black colour)	Ghaggar	Sri Gangana-gar	Rajasthan	India	Amalanand Ghosh (1951), B.B. Lai & B.K. Thapar (1961)
Banawali	Saraswati	Fatehabad	Haryana	India	R.S. Bist (1973)
Dholavira	Luni	Kutchh	Gujarat	India	J.P. Joshi (1967-68)

GEOGRAPHY

General Aspects of Geography

Latitude

- It is the angular distance of a point on the earth's surface, measured in degrees from the centre of the earth. It varies from 0 to 90° North and 0 to 90° South.
- Latitudes are circular lines which are parallel to the equator, which lies midway between the poles. Hence, these lines are called **parallels of latitude**. The latitudes are also called as temperature coordinates because with the increase in latitudinal distance towards the poles, the temperature reduces.

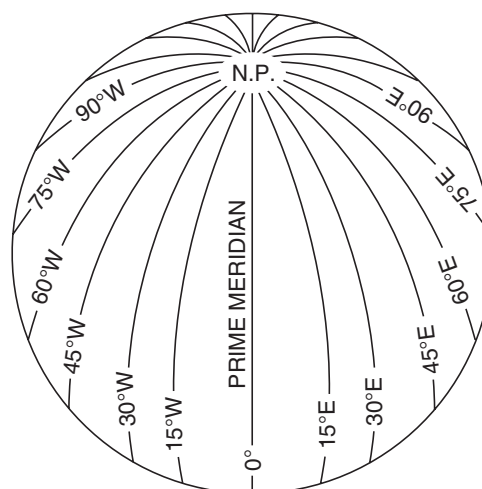


- The most important lines of latitude are the Equator (0°), the Tropic of Cancer (23½°N), the Tropic of Capricorn (23½°S), the Arctic Circle (66½°N) and the Antarctic Circle (66½°S).
- The midday sun is exactly overhead at least once a year on all latitudes in between the Tropic of Cancer and the Tropic of Capricorn. This area, therefore receives the maximum heat and is called the **Torrid Zone** (or Tropical Zone).

- The areas bounded by the Tropic of Cancer and the Arctic Circle in the northern hemisphere, and the Tropic of Capricorn and the Antarctic Circle in the southern hemisphere, have moderate temperature, hence called **Temperate Zones** (or Mild Zone).
- Areas bounded by the Arctic Circle and North Pole, and the Antarctic Circle and South pole are called **Frigid Zones**. These zones are very cold as the sun does not rise above the horizon.

Longitude

- It is an angular distance measured in degrees along the equator east or west of the Prime Meridian (0°). It varies from 0 to 180° E and 0 to 180° W. It is also called as time coordinates.
- Longitudes are also known as **Great circles** because it divides earth into two equal parts. Each longitude cuts each latitude at 90°.
1° = 4 minute i.e. 15° = 1 hour
- Meridians are a series of semicircles that run from pole to pole passing through the equator.



PRACTICE QUESTIONS

GEOGRAPHY

- Q.1** Which of the following will never get the vertical rays of the sun?
 (a) Srinagar
 (b) Mumbai
 (c) Chennai
 (d) Thiruvananthapuram
- Q.2** If the time of sunrise in Arunachal Pradesh is 6.00 am, what will be the probable time of sunrise in Saurashtra?
 (a) 6.30 am (b) 5.30 am
 (c) 8.00 am (d) 7.00 am
- Q.3** What is Durand Line?
 (a) Boundary line between Afghanistan and Pakistan
 (b) Boundary line between India and Pakistan
 (c) Boundary line between India and China
 (d) Boundary line between India and Burma
- Q.4** Duncan Pass is located between
 (a) North and Little Andaman
 (b) North and South Andaman
 (c) North and Middle Andaman
 (d) Andaman and Nicobar
- Q.5** The highest dam of India is
 (a) Bhakra dam
 (b) Nagarjuna Sagar dam
 (c) Hirakud dam
 (d) Tehri dam
- Q.6** Sahyadri is the traditional name of the
 (a) Western Ghats
 (b) Eastern Ghats
 (c) Aravallis
 (d) Barabar and Nagarjuni hills
- Q.7** The climate of India is mainly tropical because of the
 (a) Seasonal influence of jet streams
 (b) Location of the Himalayas in its north
 (c) Over-powering influence of Indian Ocean
 (d) Country being a part of Asian landmass
- Q.8** Asiatic wild ass is naturally found in
 (a) Rann of Kutch
 (b) Baghelkhand
 (c) Sunderbans
 (d) Shivaliks
- Q.9** The hill stations in ascending order of heights are
 (a) Darjeeling, Srinagar, Leh, Simla
 (b) Srinagar, Darjeeling, Simla, Leh
 (c) Srinagar, Leh, Simla, Darjeeling
 (d) Simla, Srinagar, Leh, Darjeeling
- Q.10** Which group of the rivers form delta?
 (a) Godavari, Narmada, Mahanadi
 (b) Narmada, Kaveri, Mahanadi
 (c) Godavari, Kaveri, Mahanadi
 (d) Narmada, Krishna, Kaveri
- Q.11** The Baglihar Hydro-power project, is located on which one of the following rivers?
 (a) Beas (b) Chenab
 (c) Ravi (d) Satluj
- Q.12** Match **List-I** (Hydel Power Project) with **List-II** (Location) and select the correct answer using the codes given below the lists:
- | List-I | List-II |
|--------------------|---------------------------|
| A. Balimela | 1. Jammu & Kashmir |
| B. Koyna | 2. Maharashtra |
| C. Kundoh | 3. Odisha |
| D. Salal | 4. Tamil Nadu |
| | 5. Uttar Pradesh |
- Codes:**
- | | A | B | C | D |
|-----|----------|----------|----------|----------|
| (a) | 3 | 2 | 4 | 1 |
| (b) | 5 | 1 | 2 | 4 |
| (c) | 3 | 1 | 2 | 4 |
| (d) | 5 | 2 | 4 | 1 |
- Q.13** Which one of the following pairs is correctly matched?
 (a) Gwalior : Betwa
 (b) Dhaulpur : Chambal

INDIAN POLITY

Constitutional Developments

- It was in 1934 when the idea of Constituent Assembly for India was put forward for the first time by M. N. Roy (A pioneer of communist movement in India).
- In 1935, the Indian National Congress (INC) demanded a Constituent Assembly to frame the Constitution of India.
- In 1938, Jawaharlal Nehru, on behalf of INC declared that the Constitution of Free India must be framed without outside interference and by a Constituent Assembly elected on the basis of Adult Franchise. The demand was accepted by British Government during August Offer in 1940.
- In 1942, Sir Stafford Cripps, a member of the British Cabinet came to India with draft proposal of the British Government on the framing of an independent Constitution which to be adopted after the World War II.
- The Cripps Proposals were rejected by the Muslim League which wanted India to be divided into two autonomous States with two separate Constituent Assemblies.
- Finally, the Constituent Assembly was constituted in November, 1946 under the scheme formulated by the Cabinet Mission Plan.

Important British Acts of Constitutional Significance

Regulating Act, 1773

- The Regulating Act, 1773 was the first step taken by the British Government to control and regulate the affairs of the East India Company in India.
- It designated the Governor of Bengal as the 'Governor-General of Bengal' and created an Executive Council consisting of four members to

assist him. The first Governor-General of Bengal was Lord Warren Hastings.

- It made a provision of Supreme Court at Fort William in Calcutta, comprising one Chief Justice and three other judges.
- It strengthened the control of the British Government over the East India Company by requiring the Court of Directors which was a governing body of the Company to report on its revenue, civil and military affairs in India.

Pitt's India Act, 1784

- This Act created a new body called Board of Control to manage the political affairs while Court of Directors were allowed to manage the commercial affairs. Thus, Pitt's India Act made a provision of separation in company's political and commercial activities.
- It empowered the Board of Control to supervise and direct all operations of the civil and military affairs and revenues of the British possessions in India.
- The Company's territories in India were for the first time called **British Possessions in India**.

Charter Act, 1793

- This Act recognised the courts and redefined their jurisdictions. Accordingly, the revenue administration was separated from the judiciary functions. This provision led to disappearing of the Maal Adalats (Revenue courts).
- Salaries of the members of the Board of Control to be drawn from the Indian exchequer.

Charter Act, 1813

- The East India Company's monopoly over trade was abolished in India but its monopoly over trade with China and for trade in tea retained.
- This Act asked Company to spend one lakh rupees every year on the education of Indians.
- Christian missionaries were permitted to propagate their religion in India.

5

CHAPTER

ENVIRONMENTAL
ISSUES**Introduction**

The word 'environment' has been derived from French word "*Environner*" which means "*to encircle*" or "*to surround*", whereas "Nature" word is derived from Latin word "*Natura*" which refers to characteristics of plants, animals and other creatures.

Components of Environment	
Abiotic	Biotic
<ul style="list-style-type: none"> • Energy • Radiation • Temperature and heat flow • Water • Atmospheric gases and wind • Fire • Gravity • Topography • Soil • Geological substratum 	<ul style="list-style-type: none"> • Green plants • Non-green plants • Decomposers • Parasites • Symbionts • Animals • Man

All organisms (from virus to man) are obligatorily dependent on the environment for food, energy, water, oxygen, shelter and for other needs.

Environment is total sum of all conditions which affect evolution and development of life on Earth's surface where organisms live including abiotic components (soil, water, air, etc.) and biotic components (plants, animals, microorganisms, etc.).

Biosphere

Biosphere is the part of the earth's crust, hydrosphere, and atmosphere that supports life. It is formed through the interaction of atmosphere, lithosphere and hydrosphere.

The area of contact and interaction between these three components are the basic requirement for the biosphere to exist.

Atmosphere

The atmosphere is the body of air which surrounds earth. Most of the atmosphere is located close to the earth's surface where it is most dense.

The atmosphere is divided into a series of concentric shells of sphere due to the variations in temperature and pressure at various altitude.

Air Composition

Nitrogen and oxygen are the most abundant gases in the Troposphere, constituting about 78% and 20.9% of total gaseous volume respectively. The remaining 1 % consists of argon, water vapour, CO₂ and ozone. These gases occur in minute quantities in the atmosphere, but are essential for maintaining life on the earth.

Carbon dioxide, water vapour and ozone play an important role in maintaining the heat balance of the earth.

Normal Composition of Gases in Air		
Constituents	Chemical Symbol	Mole Percent
1. Nitrogen	N ₂	78.08%
2. Oxygen	O ₂	20.95%
3. Argon	Ar	0.93%
4. Carbon dioxide	CO ₂	0.04%
5. Neon	Ne	0.00%
6. Helium	He	0.00%
7. Methane	CH ₄	0.00%
8. Krypton	Kr	0.00%

Lithosphere

The Lithosphere is the solid, rocky crust covering entire earth. This crust is inorganic and is composed of minerals.

Geologically, Lithosphere refers to the combination of earth's crust and outer mantle. It provides the platform and habitat to the biotic elements of the ecosystem. It covers the entire surface of the earth from the top of Mount Everest to the bottom of the Mariana Trench.

Country	Capital	Area (in sq. km)	Currency	Name of Parliament	Religion
Switzerland	Berne	41,281	Swiss Franc	Bundesver Sammulung (Nationalrat & Standerat)	Christianity
The Netherlands	Amsterdam	41,160	Gilder	The Staten General	Christianity
Vatican City	Vatican City	0.44	Lira	Pontifical Commission	Christianity
Oceania					
Australia	Canberra	7,686,848	Australian Dollar	Federal Parliament	Christianity
Fiji Islands	Suva	18,272	Dollar	Parliament	Christianity, Islam, Hinduism
New Zealand	Wellington	269,057	NZ Dollar	Parliament	Christianity
Papua New Guinea	Port Moresby	462,840	Kina	National Parliament	Christianity
Africa					
Ethiopia	Addis Ababa	1,221,900	Birr	Shergo	Christianity
Nigeria	Abuja	923,768	Naira	National Assembly	Christianity
Sierra Leone	Freetown	71,740	Leone	Parliament	Christianity, Islam, Tribal
South Africa	1. Pretoria (Adm.); 2. Capetown (Legislative); 3. Bloemfontein (Judicial)	1,221,037	Rand	House of Assembly	Hinduism, Islam, Christianity
Sudan	Khartoum	1,886,068	Sudanese Pound (SDG)	National Legislature	Islam
Zimbabwe	Harare	390,580	Dollar	Senate & House of Assembly	Christianity, Islam, Tribal

AWARDS & HONOURS

Bharat Ratna

- Bharat Ratna is the highest civilian honour given for exceptional service towards advancement of Art, Literature, Science and sports in recognition of Public Service of the highest order. The provision of Bharat Ratna was introduced in 1954.
- There is no written provision that Bharat Ratna should be awarded to Indian citizens only. The award has been awarded to a naturalized Indian citizen, Agnes Gonxha Bojaxhiu, better known as Mother Teresa (1980) and to two non-Indians – Khan Abdul Ghaffar Khan (1987) and Nelson Mandela (1990).
- It is also not mandatory that Bharat Ratna be awarded every year.

Bharat Ratna Awardees					
Sl.	Name	Year	Category	Remarks	State (if Indian) else Country
1.	Chakravarti Rajagopalachari	1954	Public Affairs	Last Governor-General, Freedom Fighter.	Tamil Nadu
2.	Dr. Sarvepalli Radhakrishnan	1954	Public Affairs	Second President, First Vice President, Philosopher.	Tamil Nadu
3.	Dr. C.V. Raman	1954	Science & Engineering	Nobel-prize winning Physicist	Tamil Nadu
4.	Dr. Bhagwan Das	1955	Literature & Education	Philosopher, Freedom Fighter	Uttar Pradesh
5.	Dr. Sir Mokshagundam Visvesvaraya	1955	Civil Services	Engineer	Karnataka
6.	Pandit Jawaharlal Nehru	1955	Public Affairs	First Prime Minister, Freedom Fighter, Author.	Uttar Pradesh
7.	Govind Ballabh Pant	1957	Public Affairs	Freedom Fighter, Home Minister	Uttar Pradesh
8.	Dr. Dhondo Keshav Karve	1958	Social Work	Educationist, Social Reformer	Maharashtra
9.	Dr. B. C. Roy	1961	Public Affairs	Physician, Politician	West Bengal
10.	Purushottam Das Tandon	1961	Public Affairs	Freedom Fighter, Educationalist.	Uttar Pradesh
11.	Dr. Rajendra Prasad	1962	Public Affairs	First President, Freedom Fighter, Jurist	Bihar
12.	Dr. Zakir Hussain	1963	Public Affairs	Former President, Scholar.	Andhra Pradesh
13.	Dr. Pandurang Vaman Kane	1963	Social Work	Indologist and Sanskrit scholar	Maharashtra
14.	Lal Bahadur Shastri	1966	Public Affairs	Posthumous, Second Prime Minister, Freedom Fighter	Uttar Pradesh
15.	Indira Gandhi	1971	Public Affairs	Former Prime Minister	Uttar Pradesh

Bharat Ratna Awardees					
Sl.	Name	Year	Category	Remarks	State (if Indian) else Country
16.	V.V. Giri	1975	Public Affairs	Former President, Trade Unionist.	Andhra Pradesh
17.	K. Kamraj	1976	Public Affairs	Posthumous, Freedom Fighter,	Tamil Nadu
18.	Agnes Gonxha Bojaxhiu (Mother Teresa)	1980	Social Work	Naturalized Indian citizen, Nobel Laureate (Peace, 1979).	West Bengal
19.	Acharya Vinoba Bhave	1983	Social Work	Posthumous, Social Reformer, Freedom Fighter.	Maharashtra
20.	Khan Abdul Ghaffar Khan	1987	Social Work	First non-citizen, Freedom Fighter.	Pakistan
21.	Dr. M.G. Ramachandran	1988	Public Affairs	Posthumous, Chief Minister-Actor.	Tamil Nadu
22.	Dr. Bhim Rao Ramji Ambedkar	1990	Public Affairs	Posthumous, Architect of Indian Constitution, Leader of Dalits	Maharashtra
23.	Nelson Mandela	1990	Public Affairs	Second non-citizen and first non-Indian, Leader of Anti-Apartheid movement.	South Africa
24.	Rajiv Gandhi	1991	Public Affairs	Posthumous, Former Prime Minister	New Delhi
25.	Sardar Vallabhbhai Patel	1991	Public Affairs	Posthumous, Freedom Fighter, First Home Minister of India.	Gujarat
26.	Morarji Desai	1991	Public Affairs	Former Prime Minister, Freedom Fighter.	Gujarat
27.	Maulana Abul Kalam Azad	1992	Public Affairs	Posthumous, Freedom Fighter, Educator.	West Bengal
28.	J.R.D. Tata	1992	Trade & Industry	Industrialist and philanthropist.	Maharashtra
29.	Satyajit Ray	1992	Arts	Legendary Indian Film Director	West Bengal
30.	Aruna Asaf Ali	1997	Public Affairs	Posthumous, Freedom Fighter	West Bengal
31.	Gulzarilal Nanda	1997	Public Affairs	Freedom Fighter, former Prime Minister	Punjab
32.	Dr. A.P.J. Abdul Kalam	1997	Science & Engineering	Former President, Scientist	Tamil Nadu
33.	Dr. M.S. Subbulakshmi	1998	Arts	Classical singer	Tamil Nadu

Bharat Ratna Awardees					
Sl.	Name	Year	Category	Remarks	State (if Indian) else Country
34.	C. Subramaniam	1998	Public Affairs	Freedom Fighter, Minister of Agriculture	Tamil Nadu
35.	Jayaprakash Narayan	1998	Public Affairs	Posthumous, Freedom Fighter	Uttar Pradesh
36.	Dr. Amartya Sen	1999	Literature & Education	Nobel Laureate Economist	West Bengal
37.	Gopinath Bordoloi	1999	Public Affairs	Posthumous, Freedom Fighter	Assam
38.	Pandit Ravi Shankar	1999	Arts	Classical sitar player	Uttar Pradesh
39.	Lata Mangeskar	2001	Arts	Playback singer	Maharashtra
40.	Ustad Bismillah Khan	2001	Arts	Shehnai player	Uttar Pradesh
41.	Pt. Bhimsen Joshi	2008	Arts	Classical Singer	Karnataka
42.	CNR Rao	2013	Science	Scientist	Karnataka
43.	Sachin Tendulkar	2013	Sports	Cricketer	Maharashtra
44.	Madan Mohan Malviya	2014	Public Affairs	Posthumous, Educationalist/ politician	Uttar Pradesh
45.	Atal Bihari Vajpayee	2014	Public Affairs	Former Prime Minister of India	Madhya Pradesh
46.	Bhupen Hazarika	2019	Arts	Singer & Musician (Posthumously)	Assam
47.	Nanaji Deshmukh	2019	Social Work	Freedom Fighter (Posthumously)	Maharashtra
48.	Pranab Mukherjee	2019	Public Affairs	13th President of India	West Bengal

Padma Awards

- Padma Awards, namely, **Padma Vibhushan**, **Padma Bhushan** and **Padma Shri** are given for exceptional and distinguished service in any field including service rendered by Government servants.
- The recommendations for Padma Awards are received from the State Govts./UT Administrations, Central Ministries/Departments, Institutions of Excellence, etc. which are considered by an Awards Committee.
- As per the recommendations of the Awards Committee, and after approval of the Home Minister, Prime Minister and President, the Padma Awards are announced on the eve of the Republic Day.

Indian Gallantry Awards

There are mainly three types of gallantry awards conferred in India. These are:

- War Time Awards:** Param Vir Chakra, Maha Vir Chakra, Vir Chakra
- Peace Time Awards:** Ashoka Chakra, Kirti Chakra, Shaurya Chakra

(iii) Distinguished Service Medals: Sena Medal (Army), Naosena Medal (Navy), Vayusena Medal (Air Force).

Param-Vir Chakra (PVC)

- This is the highest gallantry award for officers and other enlisted personnel of all military branches of India for the highest degree of valor in the presence of the enemy.
- Introduced on January 26, 1950, this award may be given posthumously. Literally, Param Vir Chakra means 'Wheel (or Cross) of the Ultimate Brave'.
- In Sanskrit, 'Param' means Ultimate, 'Vir' (pronounced veer) means Brave and 'Chakra' means Wheel.

Mahavir Chakra

- The Maha Vir Chakra (MVC) is the second highest military decoration in India and is awarded for acts of conspicuous gallantry in the presence of the enemy, whether on land, at sea or in the air.
- It may be awarded posthumously. More than 155 acts of bravery and selfless courage have been recognized since the inception of the medal.

GENERAL STUDIES

specific to

JHARKHAND

Basic Facts of Jharkhand

Formation of the state	15th November, 2000
Name of capital	Ranchi
Sub-capital of the state	Dumka
Rank of the state in terms of population in India	14th
Industrial capital of the state	Jamshedpur
Rank of the state in terms of Area in India	15th
Latitude of the state	21°59'N to 25°18'N
Longitude of the state	83°20'E to 87°57'E
Boundaries of the state	Bihar in the North, Odisha in the South, West Bengal in the East, Chhattisgarh and Uttar Pradesh in the West
Length of the state	463 km East to West
Breadth of the state	380 km North to South
State Language	Hindi
Area of the state	79,714 sq km
Latitudnal line passing through state	Tropic of Cancer (Passes through Ranchi and Gumla)
Districts of the Jharkhand touching the boundary of Bihar	10 (Garhwa, Pakur, Chatra, Hazaribagh, Koderma, Gridih, Sahibganj, Deoghar, Dumka, Godda)
Districts of the Jharkhand which touches the boundary with West Bengal	10 (Sahibganj, Pakur, Dumka, Jamtara, Dhanbad, Bokaro, Ramgarh, Ranchi, Seraikela-Kharsawan, Purbi-Singbhum)

Demography of Jharkhand

Population	3,29,88,134 (ranked 14th in country)
• Male	1,69,30,315
• Female	1,60,57,819
Urban Population	79,33,061
• Male	41,53,829
• Female	3,77,92,232
Population Density	414 persons per sq km
Decadal Population Growth	22.42% (2001-2011)
Percentage of Total Population of India	2.72% (2011)
Sex ratio	949 (18th)
Literacy Rate	66.4% (31st)
• Male	76.80%
• Female	55.40%
ST Population	86,45,042
SC Population	39,85,644

Administrative Structure

Legislature	Unicameral
Legislative Constituencies	81
Lok Sabha Constituencies	14
Rajya Sabha seats	6
Largest Constituency of Lok Sabha	Singhbhum
Smallest Constituency of Lok Sabha	Chatra
Total District	24
Total Division	5
Sub-Divisions	45
Blocks	264
High Court	Ranchi (21st High Court of India)

Polity of Jharkhand



ADMINISTRATION OF JHARKHAND

Jharkhand was formed with 18 districts, which were formerly part of South Bihar on 15th November, 2000. At present, the number of district has increased to 24. Ranchi, the capital of Jharkhand is one of the oldest district of the state.

Divisions

Jharkhand is divided into five divisions i.e. Palamu, Santhal Pargana, North Chhota Nagpur, South Chhota Nagpur and Kolhan. Each division has a headquarters and also a cluster of districts. The division is headed by a Commissioner. These divisions are as follows:

1. North Chhota Nagpur Division Its headquarters is in Hazaribagh. It includes seven districts i.e. Hazaribagh, Ramgarh, Giridih, Dhanbad, Chatra, Bokaro and Koderma.
2. South Chhota Nagpur Division Its headquarters is in Ranchi. It includes five districts i.e. Ranchi, Simdega, Khunti, Gumla and Lohardaga.
3. Santhal Parganas Division Its headquarters is in Dumka. It includes six districts i.e. Dumka, Deogarh, Sahibganj, Pakur, Jamtara and Godda.
4. Kolban Division Its headquarters is in Chaibasa. It includes three districts i.e. Purbi Singhbhum, Pashchimi Singhbhum and Seraikela-Kharsawan.
5. Palamu Division Its headquarters is in Medininagar in Palamu district. It includes three districts i.e. Palamu, Latehar and Garhwa.



Districts

Jharkhand is divided into 24 districts. Each district is headed by District Magistrate, who is also called District Collector. He is responsible for the overall administration of the district. They maintain law and order, revenue, development and overall maintenance of their districts.

GENERAL SCIENCE



SECTION

B

Jharkhand Diploma Level
Combined Competitive
Examination

JDLCCE-2023

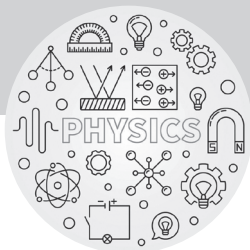
JUNIOR ENGINEER



1

CHAPTER

PHYSICS



Physics is a branch of science which is concerned with all aspects of nature on both the microscopic and macroscopic level. Its scope of study encompasses not only the behavior of objects under the action of forces but also the nature of gravitational, electromagnetic, nuclear forces among others. The ultimate objective of physics is to formulate comprehensive principles that bring together and explain all such phenomena.



- Unit is the chosen standard used for measuring a physical quantity.
- There are basically two types of unit:
 - 1. Fundamental Unit:** These units are a set of measurements, defined arbitrarily and from which other units are derived. Examples: meter, kilogram, second, etc.
The fundamental unit of some of the physical quantities are given below:

International System of Units (S.I.)		
Physical	Fundamental	Symbol
Mass	Kilogram	kg
Length	Metre	m
Time	Second	s
Temperature	Kelvin	K
Electric-current	Ampere	A
Luminous intensity	Candela	Cd
Quantity of matter	Mole	mol

Systems of units	Length	Mass	Time
C.G.S. System	Centimetre	Gram	Second
F.P.S. System	Foot	Pound	Second
M.K.S. System	Metre	Kilogram	Second

2. Derived Unit: All the units which are expressed in terms of fundamental units are known as derived units. Examples: Newton, Joule, etc.

- Internationally, there are four types of unit systems. These are:
 - 1. S.I. Units/System:** It is the modern form of the metric system, and is the most widely used system of measurement. It comprises a coherent system of units of measurement built on seven base units namely kilogram, meter, second, candela, ampere, kelvin and mol.
 - 2. CGS System:** The centimeter-gram-second (CGS) system of units is a variant of the metric system based on centimetre as the unit of length, gram as unit of mass, and the second as the unit of time.
 - 3. FPS System:** The foot-pound-second (FPS) system is a system of units built on three fundamental units: the foot for length, the pound for mass and the second for time.
 - 4. MKS System:** The MKS system of units is a physical system of units that expresses any given measurement using base units of the metre, kilogram, and second.

CHEMISTRY

MATTER

- Anything that has mass and occupies space is called matter. Matter can be classified on the basis of physical state and chemical constitution. In the physical state it is found in the form of solids, liquids and gases. These three forms of matter are found because of intermolecular force (force among atoms and molecules).
- Solids have a definite shape because of strong intermolecular force. The molecular force is not so strong in liquids, and therefore, liquids do not have a definite shape and have fluidity. Because of extremely weak intermolecular force, gases move freely and can occupy any space. According to chemical composition, matter can be classified into elements, compounds and mixtures.

Composition of Matter

- Substance:** A substance is a matter which cannot be separated into other kinds of matter by any physical force.
- Element:** It is the purest form of a substance which cannot be broken into simpler substances by any chemical or physical process. Only one kind of atom is present in an element. There are 118 known elements, out of which 27 are man-made.

Elements can be divided into three groups: metals, non-metals and metalloids.

- 1. Metals:** Any chemical element that is an effective conductor of electricity and heat can be defined as a metal. These are 90 in number.

- 2. Non-metals:** These are substances that do not exhibit such characteristic properties of metals as hardness, mechanical adaptability, or the ability to conduct electricity. There are 24 non-metals, out of which 12 found in solid state, one in liquid (Br) state and 11 in gaseous state.

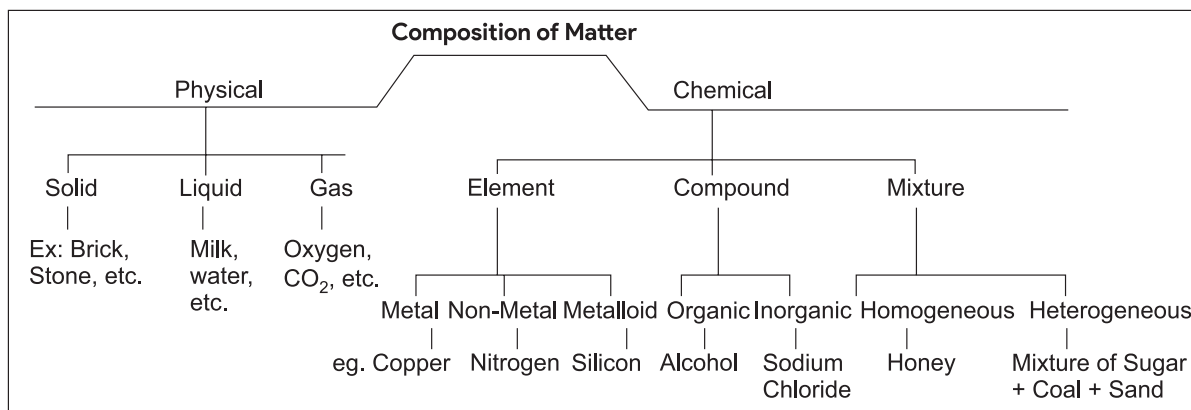
- 3. Metalloids:** Metalloids possess the characteristics of both metal and non-metal, e.g. Silicon (Si), Germanium (Ge) and Antimony (Sb).

- Compound:** Two or more elements chemically combined to form a substance is called a compound.
- Mixture:** More than one substance (elements or/and compounds) is combined together to form a mixture. It can be separated by physical processes into two or more substances.

Classification of mixture is done under two categories:

- (i) Homogeneous mixture:** A homogeneous mixture, which is also called a solution, has a uniform composition throughout. For example: Air with nitrogen and oxygen as two main constituents, honey, a solution of salt or sugar, etc.

- (ii) Heterogeneous mixture:** A mixture which consists of basically distinct parts, each with different properties, is called a heterogeneous mixture. For example: When oil is mixed with water it forms a heterogeneous mixture.



Basics of COMPUTERS

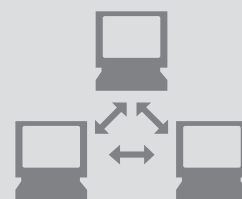
SECTION



Jharkhand Diploma Level
Combined Competitive
Examination

JDLCCE-2023

JUNIOR ENGINEER





Basics of COMPUTERS

BASICS OF COMPUTER

Computer

- A computer is basically a machine that performs a specified sequence of operations as per the set of instructions (known as programs) given on a set of data (input) to generate desired information (output).
- A complete computer system consists of four parts:
 1. **Hardware:** Hardware represents the physical and tangible components of the computer.
 2. **Software:** Software is a set of electronic instructions consisting of complex codes (Programs) that make the computer perform tasks.
 3. **User:** The computer operators are known as users.
 4. **Data:** Data consists of raw facts, which the computer stores and reads in the form of numbers.

Sl.	Generation & Description
1	First Generation (1946-1959): Vacuum tube based
2	Second Generation (1959-1965): Transistor based
3	Third Generation (1965-1971): Integrated Circuit based
4	Fourth Generation (1971-1980): VLSI microprocessor based
5	Fifth Generation (1980-onwards): ULSI microprocessor based

Types of Computers

Analog computers:

These types of computer always take input in form of signals. The input data is not a number infact a physical quantity like temp., pressure, speed, velocity. Example: Speedometer.

Features:

- Signals are continuous of (0 to 10 V).
- **Accuracy:** 1% Approximately.

Digital Computers:

These computers take the input in the form of digits and alphabets, and convert it into binary format. Examples: Computer used for the purpose of business and education is also an example of digital computers.

Features:

- Digital computers are high speed, programmable electronic devices.
- Signals are two level of (0 for low/off 1 for high/on).
- Accuracy unlimited.

Hybrid Computer:

The combination of features of an analog and digital computer is called a Hybrid computer.

Features:

- The main examples are central national defence and passenger flight radar system.
- They are also used to control robots.

Super Computer:

Supercomputers are used for the heavy stuff like weather maps, construction of atom bombs, earthquake prediction etc. It can process trillions of instructions in seconds.