

IMPORTANT DEFINITIONS

- ❖ **gene editing** (noun) – genome editing; a method that lets scientists change the DNA of many organisms, including plants, bacteria, and animals. Editing DNA can lead to changes in physical traits and disease risk. These technologies act like scissors, cutting the DNA at a specific spot. Then scientists can remove, add, or replace the DNA where it was cut.
- ❖ **Crispr-Cas9** (noun) – a genome editing tool (genetic scissor). CRISPRCas9 is a system used by bacterial cells to recognise and destroy viral DNA as a form of adaptive immunity. Using components of the CRISPR system, researchers can remove, add or alter specific DNA sequences in the genome of higher organisms.
- ❖ **immune system** (noun) – the immune system is a complex network of cells, tissues, and organs. Together they help the body fight infections and other diseases.
- ❖ **CRISPR-Cas immune system** (noun) – The system, called CRISPRCas, provide sequence-specific adaptive immunity and fundamentally affect our understanding of virus–host interaction. CRISPR-based immunity acts by integrating short virus sequences in the cell’s CRISPR locus, allowing the cell to remember, recognize and clear infections.
- ❖ **embryo** (noun) – an early stage of development of unborn child. It develops from a single cell (called zygote) resulting from the fertilization of the female egg cell by the male sperm cell.
- ❖ **black hole** (noun) – a place in space where gravity pulls so much that even light can not get out. An extremely dense object from which no light can escape. Anything that comes within a black hole’s “event horizon,” its point of no return, will be consumed, never to re-emerge, because of the black hole’s unimaginably strong gravity.
- ❖ **field equation** (noun) – In general theory of relativity the Einstein field equations (EFE; also known as Einstein’s equations) relate the geometry of space time with the distribution of matter within it.
- ❖ **general theory of relativity** (noun) – the laws of physics are the same for all non-accelerating observers (frames of reference), and that the speed of light in a vacuum was independent of the motion of all observers.
- ❖ **singularity** (noun) – In the center of a black hole is a gravitational singularity, a one-dimensional point which contains a huge mass in an infinitely small space, where density and gravity become infinite and space-time curves infinitely, and where the laws of physics as we know them cease to operate.
- ❖ **event horizon (EH)** (noun) – an event horizon (EH) is a region in spacetime beyond which events cannot affect an outside observer. In layman’s terms, it is defined as the shell of “points of no return”, i.e., the boundary at which the gravitational pull of a massive object becomes so great as to make escape impossible (or) The point of no return beyond which even light cannot escape the black hole’s gravitational attraction (or) The boundary of the region from which no escape is possible.
- ❖ **light year** (noun) – a light-year is a unit of distance. It is the distance that light can travel in one year. Light moves at a velocity of about 300,000 kilometers (km) each second.

- ❖ **singularity theorem** (noun) – The theorem implies that space-time singularities are to be expected if either the universe is spatially closed or there is an ‘object’ undergoing relativistic gravitational collapse (existence of a trapped surface). The Penrose theorem implies that singularities must arise when a black hole is formed by gravitational collapse. In addition to some technical assumptions, the proof of this theorem relies upon an energy condition and on the assumption of the existence of a trapped surface. Such a surface arises when the gravitational field of the collapsing body becomes so strong that outgoing light rays are pulled back toward the body.
- ❖ **trapped surface** (noun) – a trapped surface is one where light is not moving away from the black hole. The boundary of the union of all trapped surfaces around a black hole is called an apparent horizon.
- ❖ **quasars** (noun) – Quasi Stellar radio sources, abbreviated QUASARS, are the most dynamic and far-off objects in a collective known as active galactic nuclei (AGN). These radiant sources were formed approximately twelve billion years ago. Quasar formations take place by collision of galaxies, i.e., the central black holes merge to form a supermassive black hole.
- ❖ **Sagittarius A*** (noun) – a bright and very compact astronomical radio source at the Galactic Center of the Milky Way. The dense region in the centre of our galaxy-the Milky Way-is indeed a black hole is named Sagittarius A*.
- ❖ **keplerian orbit** (noun) – kepler orbit, elliptical orbit; the motion of one body relative to another, as an ellipse, parabola, or hyperbola, which forms a two-dimensional orbital plane in three-dimensional space.
- ❖ **lockdown** (noun) – an emergency protocol implemented by the authorities that prevents people from leaving from a place; An extended state of confinement/encirclement/isolation of a person by the authority.
- ❖ **quarantine** (noun) – a process of separating out people, animals and things (such as plants) from others for a period of time in order to control/restrict the spread of a contagious disease; Quarantine is imposed to separate and restrict the movement of persons, who may have been exposed to infectious disease, but not yet known to be ill.
- ❖ **coronavirus** (CoV) (noun) – a large family of viruses that cause illness ranging from the common cold to more severe diseases. common signs of infection include respiratory symptoms, fever, cough, shortness of breath and breathing difficulties. In more severe cases, infection can cause pneumonia, severe acute respiratory syndrome, kidney failure and even death.
- ❖ **prevalence** (noun) – it refers to the number of cases of a disease that are present in a particular population at a given time whereas “incidence” refers to the number of new cases that develop in a given period of time.
- ❖ **community transmission** (noun) – community spread/transmission means spread of an illness/disease for which the source of infection is unknown. An infected person has no travel history to an affected area and no known contact with a person previously diagnosed with a particular disease. It is possible the patient is exposed to a returning traveler who is infected.

- ❖ **local transmission** (cluster) (noun) – local spread/transmission means spread of an illness/disease for which the source of infection is known. An infected person has travel history to an affected area. We could able to identify and trace individual cases, and ring-fence a cluster (of them) to prevent the spread of infection.
- ❖ **Indian Council of Medical Research (ICMR)** (noun) – the apex body in India for the formulation, coordination and promotion of biomedical research, is one of the oldest medical research bodies in the world. As early as in 1911, the Government of India set up the Indian Research Fund Association (IRFA) with the specific objective of sponsoring and coordinating medical research in the country. It was redesignated in 1949 as the Indian Council of Medical Research (ICMR). The ICMR is funded by the Government of India through the Ministry of Health & Family Welfare.
- ❖ **serology** (noun) – a method of diagnostic examination of blood serum concerning immune system's response to pathogens (pathogen is something, like bacteria/virus, that causes disease). (serum is an amber (yellowish-orange), watery fluid, rich in proteins, obtained from blood that has coagulated whereas plasma is a clear yellowish fluid part of the blood, contains blood clotting agents-Fibrinogen).
- ❖ **herd immunity** (noun) – it refers to a means (ways) of protecting a whole community from disease by immunizing a critical mass of its populace (population). It is also defined as a form of indirect protection from infectious disease that occurs when a large percentage of a population are immune to an infection, thereby providing a measure of protection for individuals who are not immune.
- ❖ **Hepatitis C virus (HCV)** (noun) – the hepatitis C virus (HCV) is a bloodborne virus, causes a liver disease (Hepatitis C). The virus can cause both acute and chronic hepatitis (& liver cancer), ranging in severity from a mild illness lasting a few weeks to a serious, lifelong illness.
- ❖ **Hepatitis B virus (HBV)** (noun) – the hepatitis B virus (HBV) is a bloodborne virus, causes a liver disease (Hepatitis B). It can cause chronic infection and puts people at high risk of death from cirrhosis and liver cancer. Hepatitis B is considerably more common and causes more liver-related cancer and death worldwide than hepatitis C. The hepatitis B virus is also approximately 5-10 times more infectious than hepatitis C, and far more stable.
- ❖ **Flavivirus** (noun) – a family of RNA viruses transmitted by arthropod vectors (mosquitos, flies, ticks & etc.,) that cause some important diseases, including dengue, yellow fever, various types of encephalitis, and hepatitis C. Flaviviruses have single-stranded RNA as their genetic material.
- ❖ **Purchasing Managers' Index (PMI)** (noun) – Purchasing Managers Index (PMI) is a monthly business survey data provided by IHS Markit. The monthly data are derived from surveys of senior executives at private sector companies. PMI data is used for accurate and timely insight into the health of a particular economy. The PMI data are used by financial and corporate professionals to better understand where economies and markets are headed, and to uncover opportunities.
- ❖ **(fiscal) stimulus** (noun) – Government measures, normally involving increased public spending and lower taxation, aimed at giving a positive jolt to economic activity.

- ❖ **IHS Markit** (noun) – it is a global leader in information, analytics and solutions for the major industries and markets that drive economies worldwide. It partners with clients in business, finance and government to help them see the big picture with unrivalled insights that lead to well-informed, confident decisions.
- ❖ **GST compensation** (noun) – Under the GST law (In India), state governments are guaranteed full compensation for any revenue loss for the first five years after the introduction of the goods and services tax (GST) in July 2017. The compensation is a gap between actual revenue collected and projected revenue.
- ❖ **trust deficit** (noun) – lack of trust (on authorities-from societal point of view). Situations with low levels of trust are not supportive and often counterproductive. People feel vulnerable and look at each other with suspicion. As a result, they are less open, since they fear that they will not be fairly treated by the other side.
- ❖ **monetary policy** (noun) – monetary policy refers to the use of monetary instruments under the control of the central bank to regulate magnitudes such as interest rates, money supply and availability of credit with a view to achieving the ultimate objective of economic policy.
- ❖ **The monetary policy committee** (MPC) (noun) – it is a six-member panel that is expected to bring “value and transparency” to rate-setting decisions. It will feature three members from the RBI — the Governor, a Deputy Governor and another official — and three independent members to be selected by the Government. The MPC will meet four times a year to decide on monetary policy by a majority vote.
- ❖ **fiscal policy** (noun) – fiscal policy is how the government uses taxing and spending to expand or contract economic growth. It complements central bank monetary policy. Fiscal policy, in simple terms, is an estimate of taxation and government spending that impacts the economy.
- ❖ **inequality** (noun) – Inequality is simply defined as “the state of not being equal, especially in status, rights and opportunities; imbalance, unevenness, disproportion, disparity.
- ❖ **Great Depression** (noun) – a worldwide economic depression that started in 1929 and lasted until the late 1930s (almost for 10 years until about 1939). Although it originated in the United States, the Great Depression caused drastic declines in output, severe unemployment, and acute deflation in almost every country of the world.
- ❖ **The Citizenship (Amendment) Act, 2019** (noun) – The Citizenship (Amendment) Act, 2019 was passed by the Parliament of India on 11 December 2019. It amended the Citizenship Act, 1955 by providing a path to Indian citizenship for illegal migrants of Hindu, Sikh, Buddhist, Jain, Parsi, and Christian religious minorities, who had fled persecution from Pakistan, Bangladesh and Afghanistan before December 2014. Muslims from those countries were not given such eligibility.
- ❖ **concurrent list** (noun) – the list which includes the power to be considered by both the union and state government (as given in the Seventh Schedule to the Constitution of India).
- ❖ **Parliamentary Standing Committee/Parliamentary panel** (noun) – it is a committee (consisting of Members of Parliament) constituted usually on an annual basis to enable detailed consideration/discussion on all bills (all proposed laws).

- ❖ **joint parliamentary committee** (noun) – ad hoc (temporary) Committees appointed for a specific purpose (to examine irregularities and aberrations, if any, and the consequences therefore in the implementation of Government decisions and policy prescriptions) and they (JPCs) cease to exist when they finish the task assigned to them and submit a report.
- ❖ **dog whistle politics** (noun) – political messaging employing coded language that appears to mean one thing to the general population but has an additional, different or more specific resonance for a targeted subgroup.
- ❖ **Indian Penal Code (IPC)** (noun) – The Indian Penal Code (IPC) is the official criminal code of India. It is a comprehensive code intended to cover all substantive aspects of criminal law. The draft was passed into law on 6 October 1860. The Code came into operation on 1 January 1862. The Indian Penal Code of 1860, sub-divided into 23 chapters, comprises 511 sections. IPC deals with crimes and punishments.
- ❖ **National Crime Records Bureau (NCRB)** (noun) – an Indian government agency responsible for collecting and analysing crime data as defined by the Indian Penal Code (IPC) and Special and Local Laws (SLL). NCRB is headquartered in New Delhi and is part of the Ministry of Home Affairs (MHA), Government of India.
- ❖ **constitutional democracy** (noun) – a system of government based on popular sovereignty in which the structures, powers, and limits of government are set forth in a constitution.
- ❖ **speech act** (noun) – speech act is something expressed by an individual that not only presents information, but performs an action as well. Speech acts include functions such as requests, apologies, suggestions, commands, offers, and appropriate responses to those acts.
- ❖ **Chinese Communist Party (CCP)** (noun) – The Chinese Communist Party (CCP) is the founding and ruling political party of modern China, officially known as the People’s Republic of China.
- ❖ **Line of Actual Control (LAC)** (noun) – the de-facto (effective) border between India and China. The LAC is a 4,057-km border running through three areas-Western (Ladakh, Ladakh (Kashmir)), middle (Uttarakhand, Himachal) and eastern (Sikkim, Arunachal).
- ❖ **Quad/Quadrilateral** (noun) – The ‘Quadrilateral’ is described as four democracies (the United States, Japan, Australia and India) with a shared objective to ensure and support a “free, open and prosperous” Indo-Pacific region.
- ❖ **strategic autonomy** (noun) – the ability of a state (country) to pursue its national interests and adopt its preferred foreign policy without being constrained in any manner by other states.
- ❖ **capacity building** (noun) – capacity development; it has typically been defined as the development and strengthening of human and institutional resources. The United Nations Development Programme defines capacity as “the ability to perform functions, solve problems, and achieve objectives” at three levels: individual, institutional and societal.
- ❖ **primary** (noun) – (in the US) an election in which members of the same political party run against each other for the chance to be in a larger and more important election, especially presidential election.
- ❖ **filibuster** (noun) – a tactic mainly in the United States’ Senate to delay or block legislative action on a bill or other matter by debating it at length; a way of delaying/preventing a vote on a bill.

- ❖ **social security** (scheme/benefit) (noun) – (In India) social security schemes/benefits cover these (Pension, Health Insurance and Medical Benefit, Disability Benefit, Maternity Benefit, Gratuity) social insurances. The employers in the organized sector are entitled to coverage under these social security schemes. A large number of the Indian workers in the unorganized/informal sector may not have an opportunity to participate in each of these schemes.
- ❖ **The Electoral College** (noun) – it is a group of people that elects the president and the vice president of the United States. (The word “college” in this case simply refers to an organized body of people engaged in a common task.)
- ❖ **across the aisle** (phrase) – In this expression, the “aisle” refers to the actual physical walkway that divides the legislative (parliamentary) halls. Members of the two parties sit on opposite sides.

IDIOMS & PHRASES

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| <ul style="list-style-type: none"> ❖ in the throes of – struggling with, grappling with, in the middle of. ❖ put the spotlight on – to bring (public) attention to someone or something. ❖ stand/turn something on its head – completely change the meaning of an idea or argument. ❖ put something down to someone/something – to consider that a problem/situation is caused by a particular person/thing. ❖ off the hook – release someone from a difficult situation; free someone from an obligation; out of trouble, acquitted/cleared. ❖ paper over – cover up, conceal, hide, camouflage, gloss over. ❖ take cognisance of – notice, attend to, take into account, give attention to. ❖ burn the midnight oil – to study or work (with concentration or dedication) late into the night. ❖ hold someone to ransom – threaten, force, demand. ❖ take shape – become clear/definite, become tangible, fall into place. | <ul style="list-style-type: none"> ❖ calling to account – to ask or question one to explain about one’s crimes/ wrongdoings. ❖ grapes of wrath – anger, more specifically the growing anger that eventually leads to bloodshed; a violent condition. ❖ have one’s work/task cut out – be dealt with a difficult task. ❖ conspicuous by one’s absence/silence – noticeably not present where one should be. ❖ follow suit – emulate, follow, take as an example/model. ❖ turn a blind eye – overlook, disregard, neglect, ignore, gloss over. ❖ in the shadow of – in a situation when attention is influenced on someone/something (better known). ❖ pulls and pressures – relating to a situation which is quarrelsome or argumentative (on exerting/exercising influence on something & having too many demands for something). ❖ in the face of – despite, notwithstanding, regardless of; when confronted with. ❖ going forward – in the future. ❖ lower one’s guard – to become less careful, to become less vigilant, to become less alert. |
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- ❖ **in light of** – taking into consideration, considering, taking into account, keeping in mind, in view of.
- ❖ **hold the key** – to have control.
- ❖ **on the ground** – in a situation/place where things are happening really/ practically.
- ❖ **at/in/to the forefront of** – be in a leading/front/important position in an important activity; spearhead, van guard, front line, leading position.
- ❖ **at length** – in detail, in depth, fully, thoroughly.
- ❖ **in contrast (to)** – in opposition to, be very different from.
- ❖ **tie one's hands** – prevent one from acting freely.
- ❖ **give and take** – compromise, concession; cooperation/teamwork.
- ❖ **throw someone out** – expel, evict, force out, oust, remove.
- ❖ **show someone in the greatest light** – to make someone seem to be the greatest one.
- ❖ **(keep) in the dark** – unaware of, ignorant of, uninformed about.
- ❖ **face-to-face** – opposing each other, confronting each other, facing each other.
- ❖ **on one's own** – alone, all alone, by oneself, all by oneself.
- ❖ **draw attention to** – emphasize, highlight, underscore; focus on.
- ❖ **in play** – in action, in effect; subject to being taken over by another.
- ❖ **shift gear** – to change from one level (of activity) to another.
- ❖ **at a time** – during.
- ❖ **regardless of** – irrespective of, without consideration of, notwithstanding, in spite of.
- ❖ **far from** – not, not at all, nowhere near.
- ❖ **sort of** – kind of, somewhat, somehow.
- ❖ **take into account** – consider, note, pay regard to, bear in mind.
- ❖ **in retrospect** – looking back, on reflection, in/with hindsight.
- ❖ **far more** – a lot more, much more.
- ❖ **over time** – it describes something which happens gradually.
- ❖ **with regard to** – in respect of, concerning, with reference to.
- ❖ **in summary** – briefly, in short, to come to the point.
- ❖ **in short** – briefly, in essence, in sum.
- ❖ **by the way** – incidentally, by the by, as it happens.
- ❖ **suo motu** – Latin term means “on its own motion”. It is used where a government agency acts on its own knowledge.
- ❖ **cease to exist** – come to an end (gradually).
- ❖ **rather than** – instead of.
- ❖ **so much so** – to such a great extent/ level/degree.
- ❖ **in a bad light** – give a bad name to, disgrace, discredit.
- ❖ **on display** – to show something for people to see.
- ❖ **anyone's guess** – very difficult to predict.
- ❖ **call into question** – doubt, distrust, mistrust, suspect.
- ❖ **as far as** – to the degree/extent that.
- ❖ **make public** – announce, communicate, make known, disseminate.
- ❖ **make clear** – explain, clarify, elucidate.
- ❖ **in terms of** – with regard to, as regards, in respect of, with reference to.
- ❖ **for the sake of** – for the purpose of, in order to improve/achieve; in the interest of.
- ❖ **weigh on your conscience** – to make you feel guilty.
- ❖ **make a mockery of** – make something to look foolish/absurd.

- ❖ **on the face of it** – apparently, seemingly, evidently/ostensibly; at first glance.
- ❖ **at the back of your mind** – being thought about something without you realizing it.
- ❖ **on account of** – because of, owing to, due to, by virtue of.
- ❖ **so far** – until now, up to the present, up to this point.
- ❖ **on the eve of** – a period or day before an important event.
- ❖ **lose sight of** – pay no attention to, fail to consider, be lax about.
- ❖ **come into force** – come to effect (a new law, rule, change etc.).
- ❖ **in favour of** – in support of, encouraging of, approving of.
- ❖ **no exception** – as usual, the same as, to be similar.
- ❖ **thus far** – until now, till date.

PHRASAL VERBS

- ❖ **hype up** – publicize, advertise, promote, build up (excessively).
- ❖ **fob off** – put off, postpone, defer/delay, stall, prevent something (with an excuse/trick).
- ❖ **peel off** – take off, strip off, remove.
- ❖ **notch up** – score, achieve, attain/gain something.
- ❖ **bump up** – move someone to a higher level.
- ❖ **shape up** – improve, get better, progress.
- ❖ **conjure up** – produce, materialize, generate (by magic).
- ❖ **mete out** – dispense, give out, hand out (a punishment).
- ❖ **rough up** – beat up, attack, manhandle/mistreat.
- ❖ **contend with** – deal with, cope with, face, grapple with (a difficult or unpleasant situation).
- ❖ **carry out** – conduct, perform, execute.
- ❖ **build up** – increase, improve, raise, augment.
- ❖ **come across** – seem, appear, look
- ❖ **inch up** – move, ascend, advance, increase gradually.
- ❖ **move away from** – change/alter one's ideas/beliefs and so.
- ❖ **pull back** – withdraw, retreat, disengage.
- ❖ **come up** – occur or present itself unexpectedly.
- ❖ **go after** – pursue something; strive for, push/work towards, try to achieve (a goal).
- ❖ **move on** – leave & start doing something new.
- ❖ **set up** – establish, start/begin, inaugurate, create.
- ❖ **speak of** – mention, talk about, discuss, refer to, remark on, comment on.
- ❖ **cover up** – conceal, hide, camouflage (a mistake or crime).
- ❖ **draw up** – formulate, create, work out.
- ❖ **bring in** – cause, bring about, give rise to, create, produce.
- ❖ **call for** – require, publicly ask/necessitate, demand.
- ❖ **rule out** – eliminate, reject, dismiss.
- ❖ **go on to** – continue, proceed (to do something).
- ❖ **take over** – assume control of, take control of, take charge of.
- ❖ **play out** – happen, occur, take place.
- ❖ **push through** – succeed in passing a law accepted by the people who oppose it.