Science

Important facts

- Largest bone → Femur [thigh bone]
- Smallest bone → Ear ossicle, Stapes.
- Blood volume → 6-8 litres
- Universal Blood donor → O -ve ✓
- Universal Blood recipient → ab +ve ✓
- Normal body temperature → 98.4°f or 37°c
- Normal heart beat → 72-75/minute
- Largest muscle in body → Gluteus maximus
- Thinnest Skin → Conjunctive
- Total number of muscles in the body → 639
- Total number of bones in the body → 206
- Largest organ of Human body → Skin

Fields of Science

Study of Living beings	→	Biology
Study of Animals	→	Zoology
Study of internal structure after cutting	→	Anatomy study
Study of tissues	→	Histology
Study of cells	→	Cytology
Study of flying organism	→	Aerobiology
Study of Apes and man	→	Anthropology
Study of Honey industry	→	Apiculture
Study of Heart	→	Cardiology
Study of shells	→	Conchology
Study of skin	→	Dermatology
Study of insects	→	Entomology
Study of cause of diseases	→	Etiology
Study of flowers	→	Floriculture
Study of Heredity and variation	→	Genetics

Study of female organs → Gynaecology
Study of Blood → Haematology
Study of Liver → Hepatology
Study of bones → Osteology
Study of soils → Pedology
Study of fruits → Pomology
Study of virus → Virology
Study of seeds → Spermatology

DENTAL FORMULA → Milk teeth of Man
Incisors [i] → 2 on upper Jaw and 2 on lower Jaw
Canines [c] → 1 on upper Jaw and 1 on lower Jaw
Premolars [p] → 2 on upper Jaw and 2 on lower Jaw
Molar [m] → 0 on upper Jaw and 0 on lower Jaw

It can be represent as icpm/icpm
Man [Milk set] → 2120/2120 = 20
~~Man [Adult~~
Man [Adult] → 2123/2123 = 32
Horse → 3143/3143 = 44
Dog → 3142/3143 = 42
Squirrel → 1023/1023 = 24

Milk teeth are yellowish colour while the permanent teeth are white. Permanent teeth appear between 3 and 20 years of age. First milk teeth to appear is incisor while the first permanent teeth to appear is 1st molar. First molar is largest of all teeth while the third molar [wisdom teeth] is smallest and appears at last. The most common Dental diseases are Gingivities [Inflammation of gums].

Import SI units

Force - Newton	Frequency - Hertz
Workdone - Joule	Plane angle - Radian
Power - Watt	Radioactivity - Oecquerel
Quantity of Electricity - Colound	Solid angle - Steradian
	Temperature - Celcius
Potential diff. - Volt	Amt of substance - Mole
Electrical resistance - Ohm	Luminous intensity - Cardela
Capacitance → Farad	
Luminous flux → Lumen	
Pressure - Pascal	
Electrical capacitance - Farad	

VITAMINS

NAME	Scientific Name	Effect of deficiency
1) B_1	Thiamine	Beri Beri
2) B_2	Riboflavin	Cheilosis
3) B_3	Nicotinic acid	Pellagra
4) B_5	Pantothenic acid	Dermatitis
5) B_6	Pyridoxine	Dermatitis, anaemia
6) B_{12}	Cyanocobalamine	Retarded Growth.
7) Vit H	Biotin	Hairfall, skin lesions
8) Vit-C	Absorbic acid	Scurvy

These are water soluble vitamins

9) Vit A	Retinol	Xerophthalmia
10) Vit D	ErgoCalciferol	Rickets, Osteomalacia
11) Vit E	Tacopherol	Reversible Sterility
12) Vit K	Phylloquinone	Haemorrhages

These are fat soluble vitamins

BLOOD :

There are two main constituents of blood
- i) Red blood corpuscles [RBC]
- ii) White blood corpuscles [WBC]

K. Landsteiner in 1900-1902 classified human blood into four groups
i) A ii) B iii) AB iv) O

Father of Blood Grouping → Karl Landsteiner.

Possible/Impossible Blood Groups of Children from parents of Various Blood Groups

Blood Grp of Parents	Possible blood group of children	Blood Group of children not possible
A x A	A or O	B or AB
A x B	O, A, B, AB	—
A x AB	A, B, AB	O
A x O	O or A	B or AB
B x B	B or A	A, AB
B x AB	A, B, AB	O
B x O	O or B	A, B
AB x AB	A, B, AB	O
AB x O	A or B	O, AB
O x O	O	A, B, AB

POLLUTION →

- → Air pollution
- → Noise pollution
- → Water pollution

] - Do urself

Rio Summit or Earth Summit

→ Read Carefully

INFECTIOUS DISEASE

Disease	Pathogen Responsible
⇒ Small pox	Variola virus
⇒ Chicken pox	Varicella virus
⇒ Common cold	Rhinovirus
⇒ Influenza/flu	Orthomixo virus
⇒ Measles	Measles [paramyxo-virus]
⇒ Mumps	Mumps virus [paramyxo-virus]
⇒ Rabies	Rabies virus [rhabdovirus]
⇒ Dengue fever	Arbovirus
⇒ AIDS	Human T-cell Leukemia Virus also called LAV
⇒ Plague	Short rod, Yersinia pestis
⇒ Typhoid	Salmonella Typhi
⇒ Whooping cough	Small short rod [Hemophilus pertussis]
⇒ Malaria	Plasmodium
⇒ Sleeping Sickness	Trypanosoma brucei
⇒ Ringworm	Microsporum Trichophyton

∫ DEFICIENCY DISEASES

Deficiency	Diseases
⇒ Proteins	Kwashiorkar Marasmus
⇒ Minerals:	
a) Iron	Iron deficiency Anaemia
b) Potassium (K)	Hypo kalemia
c) Na [Sodium]	Hyponatremia
d) I2 [Iodine]	Simple Goitre
e) Calcium [Ca]	Rickets and Osteomalacia

∫ ARTIFICIAL DNA ⇒ Do urself

∫ OZONE Layer ⇒ Do urself

Inventions → Do urself

∫ Bones → Four main types
a). Long bones - In Thigh, legs, toes, arms, fingers
b) Short bones → In wrist and ankle bones
c) Flat bones → Cranial bones protecting the brain, the sternum and ribs protecting organs in thorax and scapular.
d) Irregular bones → Such bones include the vertebrae and certain facial bones

∫ Nutrition and Diet → Do urself
Carbohydrates
Fats
Proteins
Minerals
Waters
Vitamins

∫ Kidney → Main organ of exertions through which nitrogenous Metabolic wastes are eliminated in the form of urine. Left kidney is placed slightly higher than right kidneys are bean shaped Organs, dark brown in colour, each abt 11cm, 6.5 cm broad and 2.5 cm thick. Inner margin of kidney is concave and is called Hilum.

∫ Skin →
∫ Lungs →
∫ Intestine →
∫ Liver →

Carefully Read it.

∫ LIGHT — Do urself

∫ Reflection of light →

Convex Lens is used in mirrors for bikes, trucks, Cars (1) YOGESH Sharma IBS

~~Concave Lens~~ ⇒ Used in ~~Specs~~ Specs for the person.

Concave mirror ⇒ A spherical mirror in which reflection takes place at the hollow side of the sphere of which the mirror is a part.

Convex mirror ⇒ A spherical mirror in which reflection takes place at the outerside of the sphere of which the mirror is a part.

Regular Reflation
Diffuse Reflection
} Do urself

REFRACTION OF LIGHT :- Do urself

Colours ⇒ If on mixing two colours we get white light, then colour mixed are called complementary colours.

Green + Red → Yellow
Red + Blue → Indigo
Green + Blue → Peacock Blue
Green + Peacock Blue → White
Blue + Yellow → White

Facts

- Graphite is used in pencils
- Mercury forms an amalgam with other metals.
- Chemical formula of water is H_2O
- The Gas usually filled in the electric bulb is Nitrogen
- Washing Soda is the common name for Sodium Carbonate
- Sodium Carbonate also known as washing Soda or soda ash.

∫ Quartz crystals normally used in Quartz clocks etc. is chemically Silicon dioxide.

∫ The most abundant greenhouse gases in Earth's atmosphere are
⇒ Water Vapours Carbon dioxide
Methane Nitrous oxide
Ozone Chlorofluorocarbons

∫ Bromine is a Red Liquid
∫ Diamond is the hardest substance available on Earth.
∫ Graphite is used as a Lubricant
∫ Manometer is used to measure pressure
∫ Angstrom measure Speed of Ships
∫ Light Year is related to Distance
∫ Joule is the unit of Heat
∫ Philogy is the Study of Languages
∫ Study of Earthquake is Seismology.
∫ The property of Substance to absorb moisture from the air on exposure is called deliquescence.
∫ Silicon carbide is used to cut very hard Substances
∫ Galvanished iron sheet having a coating of zinc
∫ Among the various allotropes of Carbon, Diamond is the hardest, Graphite is the softest.
∫ The Group of metals Fe, Co, Ni may best called as Transition metals.
∫ Heavy water is Deuterium oxide.
∫ Water is a good solvent of ionic because it has high Dipole moment

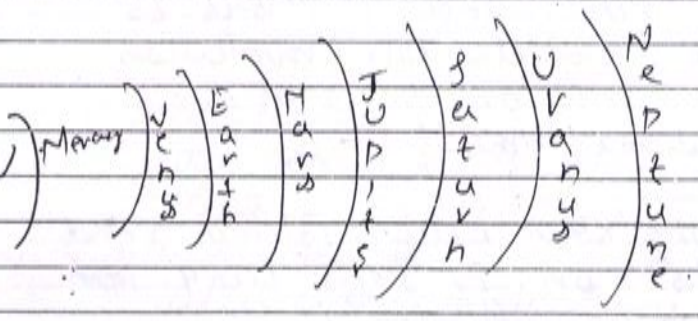
Geography

Cosmology → Study of Universe as a whole, its birth, growth, shape and size.

Our Galaxy is Milky way Galaxy [or Akash Ganga] It is Spiral in ~~Nature~~ shape

Light Year → Distance covered by Light in one Year in vaccum at speed of 3×10^5 Km/s.

Astronomical Unit → Mean distance between the earth and Sun, one Light year is equal to 60,000 A.U..



Mercury →
Closest to Sun. Rotates on its own axis in 58.65 days. and take 88 days to complete one revolution around the sun.

Venus → Brightest Object after Sun and Moon. Hottest planet, Rotates backwards on its own axis.
Nearest planet to earth.
Hottest planet. also known as Morning/Evening Star. Venus is ~~Earth's~~ Earth's twin

∫ Mars ⇒ Red planet
∫ Jupiter ⇒ Largest planet - Do it Carefully
∫ Saturn ⇒ Visible to Naked Eye.
∫ Uranus
∫ Neptune] - Do urself.

∫ Jupiter has a maximum no. of Satellites [63]

∫ Moon ⇒ Revolve around earth while revolving around its own axis.
Size ⇒ 1/6 of size of earth.
It takes 27 days, 7 hours 43 mints and 11:47 secs. to complete one revolution of earth on its own axis in same time.

∫ Neil Armstrong and Edwin Aldrin reached moon 1st on 21 July 1969. Their mission is Apollo 11.

∫ Earth ⇒ Do urself. Most important.

Four distinct of Earth ⇒
i) Lithosphere
ii) Hydrosphere
iii) Atmosphere
iv) Biosphere
- Do urself.