

29/9/19

The Raman Effect.

- 1930 - Chandra Sekhar Venkat Raman won Nobel Prize for Physics - Raman Effect.
- Native of Raman - Tiruchirapalli, Tamil Nadu.
- He despite clearing the Civil Service Competitive Exam and becoming Deputy Accountant General in Calcutta, he found the time to pursue scientific research at Indian Association for Cultivation of Sciences.
- 1917 - He gave up administrative position to become a Professor of Physics at Calcutta University.
- 1921 - He had his first trip to London as a delegate at Universities' Congress.
- Raman studied instrument percussion like tabla and mridangam.
- Raman was not satisfied by Lord Rayleigh's proposal. To prove Raman himself, he used a polarized Nicol prism on sample of sea water to show that light scattered by water molecules - molecular diffraction.
- Raman researched in areas:-
 - the scattering of light by liquids.
 - Scattering of X-rays by liquids.
 - Viscosity of liquids.

- 28th Feb - 1928 :- Raman had proof of modified radiations observed in scattering experiment due to molecular vibrations.
- 29th Feb & 8 March - It was announced in Press
- 16th March - 1928 - Raman sent a detailed note along with explanation to Nature.
- He addressed the gathering at South Indian Science Association.*
- Raman effect - When a light beam travels through a medium it is deflected by molecules in medium
- Raman spectroscopy - a small part of emerging light beam, after being deflected by molecules have a different wave length and colour.
- Application of Raman spectroscopy:-
 - study of molecular structure of compounds
 - hand held scanners for detecting drugs and explosives.
 - the pharmaceutical industry
 - Medical diagnostics.

30/9/19 Ancient Architecture in India

- Indian architecture - Mauryan period.
- Megasthenes - Ambassador of Seleucus Nicator described & appreciated Chandragupta Maurya's place - carved out of wood.
- Advancements in architecture - Ashoka's reign [268-232 BC]
- Mauryan art and architecture imbibed the influence of Persians and Greeks.
- In reign of Ashoka - Monolithic stone pillars with inscribed Dhamma.
- Lion capital of Sarnath pillar - Emblem of Republic.
- Pillar weighs 50 tonnes; 50 feet high.
- Stupas of Sanchi and Sarnath - Symbols of achievement of Mauryan architecture.
- Sanchi Stupa - beautiful sculptures - Jataka stories bear testimony to skill and aesthetic sense of artisans.
- Greek & Indian art - Gandhara art.
- Art schools - Mathura and Amaravathi schools.
- Kushanas - 100AD - Buddha statue.
- Jigures of Mathura - red stone.
- Amaravathi school developed Satavahanas of Andhra region. ↓
 - Great stupa - Lower Godavari region.
- Nagarjunakonda - Buddhist architecture.
- Gupta period started free standing Hindu temples
- The temple at Deogarh [Jhansi district] which has garbhagriha where the image of deity.

- Deogarh and Bhitargaon temples - Gupta Period
[Jhansi district] [Kanpur district]
- Cave Architecture - 200 BC and 1000 AD
 - Ajanta and Ellora Caves - Maharashtra
 - Udaygiri Caves of Odisha
- Caves hold viharas, chaityas, mandapas and temples.
- Earliest rock cut temples in western Deccan - Christian era
 - Chaitya at Karle Caves
 - Kailash temple at Ellora - Rashtrakutas
 - Ratha temples at Mahabalipuram - Pallavas
- Free standing temples - Gupta rule started.
- Great builders - Pallavas, Cholas, Pandavas, Hoysalas, Vijayanagara rulers
 - Pallava built: Kailasanathar temple [Kanchipuram]
Vaikunta Perumal temple
 - Cholas built: Brihadeeswara temple at Thanjavur
[Dravidian Style] - Gopuram
 - Stone engraving temples - Belur and Halebidu
 - Northern and Eastern India temples - [Nagara Style]
 - Shikara [spiral roof], garbhagriha [sanctum] and mandapas
 - In Odisha,
 - Lingaraja Temple - Somavamsi kings + Ganga rulers
 - Mukteshwara temple - Bhubaneswar
 - Jagannath Temple in Puri
 - Sun temple in Konark - Eastern Ganga ruler Narasimhadeva I - 13th century.

The temple complex at Khajuraho
Bundelkhand

The temple complex is dedicated to Surya (the Sun)

- Surya Temple - Konark - 12 wheeled chariot
- Temple complex at khajuraho - Chandela rulers - 1000 - 1100 AD - Madhya Pradesh Bundelkhand region
 - Kandariya Mahadeva temple
 - Mount Abu in Rajasthan → Dilwara temple - Jain tirthankaras - marble - patronage of Solanki rulers
 - Important temples
- Somnath temple in Gujarat
- Kashi - Varanasi
- Govinda Devji Temple - Mathura
- Kamakhya - Guwahati
- Shankaracharya - Kashmir
- Kali temple in Kalighat - Kolkata

Blue Jeans

- Denim cloth - "serge de Nîmes" [city of France]
 - ↓ 1700's wool + cotton.
 - Used to make sails
- Some innovative Genovese sailors - great pants
- Mid 19th century - Levi Strauss [enterprising immigrant]-
 - Strong work pants - mining - California.
- Levi Strauss - 1850 - "Levi's"
- Jacob Davis - riveted pants - mining.
- 20 May 1873 - Davis granted Strauss the use of his rivet idea.
- 1920 - Zippers replaced buttons.
- 1937 - rivets on back pockets moved inside.
 - students - furniture damage.
 - cowboys - saddles damage.
- 1960 - back pockets removed.
- Blue jeans
 - 100% cotton
 - synthetic indigo dye.
 - Rivets - copper
 - zipper buttons - steel.
 - Labels - cloth, leather or plastic
- Fabric - Preparing cotton yarn
 - dyeing and weaving yarn.
- Carding - cotton brushed with bent wire teeth.
 - brushes - cards
 - fibre - slivers.
- slivers → threads → ropes → yarns

- yarn balls - ball warps.
- carding - dyeing → slashing → sizing - weaving - finishing.
- warp + white threads → weft. Sewing.
- Pre-shrunk denim - 3% shrink - 3 washings.
- pockets and belt loops
- ↓ Leg seams
- ↓ waist band.
- ↓ belt loops + buttons + zipper
- ↓ pants are hemmed.
- ↓ Rivets + labels
- Pre washing - industrial detergent - soften denim.
- stone washing - pumice is added to load - faded.
- Small stones - abrasion.
- Large stones - • seams & pockets highlighted.
• uneven appearance.
- Pressed + ironed + tag punched.
- Metal button & rivets - durability and ability
(checked) → to withstand sweat.

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ASSIGNMENT - 3 & 4

- ① Summarize the various processes of making Blue Jeans including the quality check.

Blue Jeans are made of Denim Cloth.

The name comes from Serge de Nîmes, a city in Southern France. It was a strong material made from wool. By 1700s, it was made from wool and cotton. later only with cotton.

This material was used only to make sails. later, Genovese sailors thought, this material would make great pants.

Blue jeans came in the middle of 19th century. Levi Strauss, made this strong work pants, ^{to work}, in the mining communities of California. He first designed and marked "Levi's" in 1850.

The original Levi's did not contain rivets. A sailor by the name of Jacob Davis invented riveted pants which was patented on 20 May 1873. Zippers replaced button ⁱⁿ 1920. In 1937, the rivets on the back pockets were moved inside, in response to complaints from school boards and cowboys. In the 1960s, they were moved entirely from the back pockets.

True blue pants are made of 100% cotton, including the threads used for stitching them. The most common dye used is synthetic indigo. Rivets have been traditionally made of copper, but the zipper and the buttons are usually steel.

In order to manufacture trousers, first the fabric has to be prepared. This is done in three stages: i) preparing the cotton yarn ii) dyeing the yarn and iii) weaving the yarn.

i) The removing incoming cotton is removed from lightly packed bales and inspected, before undergoing a process known as carding. In this process, the cotton is put through machines that contain brushes with bent wire teeth. These brushes - called cards - clean, disentangle, straighten and gather together the cotton fibres. At this point, the fibres are called silvers.

Other machines join several silvers together, and these silvers are then pulled and twisted, which serves to make the threads stronger. Next, these ropes are put on spinning machines that further twist and stretch the fibres to form yarn.

i) denim is usually dyed with chemically synthesized indigo before being woven. Large balls of yarn, called ball wraps, are dipped in the indigo mixture several times so that the dye covers the yarn in layers.

These many layers of indigo dye explain why blue jeans fade slightly with each washing.

The dyed yarn is then slashed, that is, it is coated with sizing to make the threads stronger and stiffer.

ii) The yarn is then woven on large mechanical looms. Denim is not 100% blue, as the blue dyed threads forming the warp (long, vertical threads) are combined with white threads forming the weft (shorter, horizontal threads). Blue threads are packed closer together than the white threads and with the blue threads covering three out of four white threads, the blue colour dominates.

iii) The cloth is brushed to remove loose threads and dirt, and the denim is usually skewed in a way that will prevent it from twisting when it is made into clothing. The denim may then be sanforised or pre-shrunk.

Preshrunk denim should shrink no more than 3% after three washing, making the value jeans.

Once the desired design is selected, patterns from the design are cut from heavy paper or cardboard. Up to 80 different sizes are possible from one pattern. The pieces of denim are then cut with high-speed cutting machines from stacks 100 layers thick. A pair of blue jeans contains about 10 different pieces.

The pieces of denim are ready to be sewn at this point. Sewing is done in an assembly line fashion, with rows of industrial human-operated sewing machines. Each assembly line worker is assigned a specific function, such as making only back pockets.

First, the various pockets, and belt loops are assembled. Next, one worker attaches the pockets to the leg seams, another then sews the leg seams together, and still another attaches the waist-band. If the jeans include a zipper. Finally, the rivets are placed in the appropriate places and the maker's label is sewn on last.

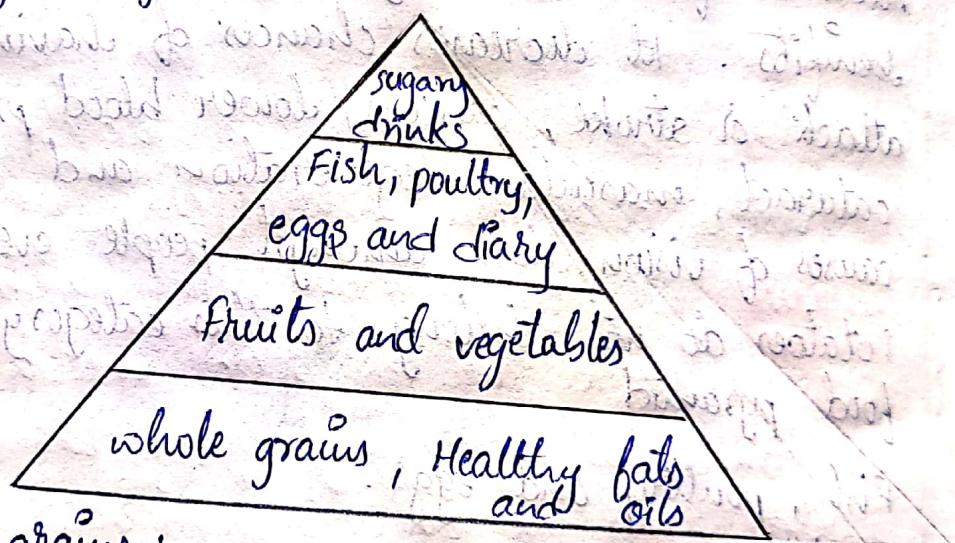
Some jeans are pre-washed. Pre-washing involves washing the jeans in industrial detergent for a short time to soften the denim. Stone washing is done for faded appearance. The completed pair of blue jeans is then pressed. A size tag is punched into the material and the jeans are folded, stacked and placed in boxes according to style, colour, size and before being sent to the warehouse for storage.

Blue jeans are inspected after they are completed. The buttons, the buttonholes, metal buttons, rivets, zippers are inspected. They also see, whether they are in same size (proper size) or not. If a problem can be corrected, the jeans are sent back for resewing.

- (2) Describe the healthy eating pyramids with a special focus on healthy and unhealthy foods?

The title of the lesson is "what should you be eating?"

Modern lifestyle often cause weight loss/gain and obesity, leading to an influx of weight loss plans and products into the market. It is widely accepted that weight gain or loss depends on food intake and exercise. weight change = calories in - calories out. A healthy pyramid helps to demonstrate how a balanced diet can be achieved. The following form the bricks of a healthy eating pyramid.



whole grains:

Healthy carbohydrates take longer for the body to digest. This helps to prevent any sudden rise and fall of blood sugar levels and insulin in the body. This prevent heart diseases and diabetes. There are many health benefits. Oatmeal, brown rice and whole wheat bread are some examples.

Healthy fats and oils:

Some fats are healthy, which helps control

cholesterol and prevent heart diseases. These are required in balanced diet and are close to the base of the pyramid. ~~such as~~ ^{but not} olives, nuts, seeds, sunflower, peanuts and fatty fish, such as Salmon are some examples.

Fruits and vegetables:

The next group of food items to appear on the food pyramid are fruits and vegetables. A diet rich in fruits and vegetables has innumerable benefits. It decreases chances of having a heart attack or stroke, cancers, lower blood pressures, cataract, muscular degeneration and the major causes of vision loss amongst people over the age of 65. Potatoes do not belong to this category on the food pyramid.

Fish, poultry and eggs.

Fish is an important source of protein and is rich in Omega-3 fatty acids, which prevent heart diseases. Chicken and Turkey are low in saturated fats and good for health. Eggs provide protein and are a good supplement to breakfast. Those suffering from diabetes or heart ailments should avoid the yolk of the egg.

Dairy:

For generations, we have believed that

dairy products are good for growing bones as they contain calcium and vitamin-D. These two are essentially required for our body. Two serving of dairy a day should be sufficient as they also be high in saturated fats.

Red meats, processed meats and butter:

These foods should be consumed very sparingly, as they contain high levels of sodium. They increase the risk of diabetes, heart diseases and colon cancer.

Refined grains, sugary drinks, sweets and salt.

Refined grains include white bread, rice and pasta. Potatoes too fall into this category of foods that should be eaten very sparingly. This items are rich in sodium and increase the risk of heart diseases and result in weight gain.

Sugary drinks cause an accelerated increase in blood sugar levels. Whereas whole grains causes gradual increase in blood sugar levels.

Foods rich in salt like potato chips, cheese and sauces contain high sodium levels that may lead to heart attack and stroke. So while buying food, we should check labels.

Healthy eating pyramid does not give any information about the quantity of food to be taken. It depends upon our body size and

~~physical activity~~ - ~~but it's not my pic~~

3) Describe the following object.

Your Mobile Phone:

Mobile Phone is a electronic device used to communicate with people over long distances without wires. It works by communicating with a nearby base station which connects it to the main phone network.

We can use mobile phones for communicating, we can read and watch news, television channels, newspapers, we can browse the information using mobile data.

We can make use of social media and we can know everything going in our society. and so on.

Mobile phone is a electronic device, we charge our mobile phones and it works on that charging for one day or more than that. Mobile phone is a flat rectangular box like structure, which are of different colours. It consists of screen, which display the things. In Earlier days, we used to operate the mobile phones using

keypad, which is under the screen. But, now-a-days, we operate the mobile phones consisting of sensors. i.e. we can select options by touching the screen. It consists of cameras. (Front and back). Based on the brand of the mobile phone, camera quality changes. Mobile phone also contains fingerprint and face sensors for unlocking the phone. Mobile phone also contains plugs for charging, connecting earphones. It contains on/off button and volume adjusting buttons. Mobile phones contains smooth surfaces.

Mobile phones have many uses. Some of them are used for communicating, browsing, knowing the news around the world, chatting with friends, sharing the information, being active user of social media, sharing the knowledge, online education, works, and so on. Beside this, there are misuses of mobile phones. youth are becoming lazy, misuse of social media, internet, unprofitable browsing, useless chatting and so on.

So control your feeling and your mobile, not

Let the mobile do control you.

- 4) write a descriptive paragraph on
Nirvana 2020:

Here I am describing about Nirvana 2020 which is held in our college on March. This is a three days event. It was held from March 13 to 15 March, 2020.

Even though 13 march was the first day of the celebration fest, the celebrations started the day before with band.

On the first day of the fest, there are many programs like projects, competitions, presentations, food stalls, talent test, fun games and so on. These are conducted by each department. Depending upon the student's interest, they (joined) participated in the above competitions and programmes.

In the meantime, the food is supplied to the faculty and students, who have fest promo t-shirts. Once the student buy the t-shirt, he will be getting lunch. All the events are completed one after the other. Afterwards,

certificates were distributed to the winners.

Sooner the programs completed, students occupied their bances. The first day of the fest is completed.

Next day all the students came with traditional look. The second day of the fest is known as the traditional day. Boys wore shirt and dandia. Girls came up with sarees. The day ended with a lot of pics in their mobiles.

At the night, there is a flash mob along with prizes distribution to the winners in different games. When the program is ended, the buses started their journey.

Last day of the fest is, animal day with DP. The program is started at 7pm.

The chief guests were lyricist Rama jogayya Shastri and IITH chairman. They inspired students with their beautiful speech. Then the programs were started. The programs were continued until 9pm, then there is DP for one hour. Soon after this, our principal ended with a "Vote of Thanks". We enjoyed these three days a lot.

5) Write an essay on "Health and healthy measures. in the wake of Covid-19 cases".

The Corona Virus 2019 (COVID-19) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2. This disease was first identified in December 2019 in Wuhan, the capital of China and has since spread globally, resulting in the ongoing 2019-20 coronavirus pandemic. Common symptoms include fever, cough and shortness of breath. As of April 7, 2020, more than 1.35 million cases have been reported in more than 200 countries and territories, resulting in more than 45,900 deaths. More than 289,000 people have recovered. And there is a chance of increasing many cases and deaths. The virus is mainly spread during close contact with others and by small droplets produced when those infected cough, sneeze or talk. People may also become infected by touching a contaminated surface and then their face.

Health and Healthy measures are to be taken by every individual to break the

chain and do reduce the chance of being effected.

The following are the healthy measures that are to be followed.

- * Practice frequent hand washing wash hands with soap and water or use alcohol based hand rub. Wash hands even if they are visibly clean.
- * Avoid participating in large gatherings.
- * Cover your nose and mouth with handkerchief / tissue while sneezing and coughing.
- * Throw used tissues into closed bins immediately after use.
- * See a doctor if you feel unwell.
- * While going out, wear a mask/ cloth to cover your mouth and nose.
- * Let's greet in traditional ways "Namaste".
- * Every individual must maintain social distance in public as well as in the home.
- * Avoid travelling to the place where coronavirus is reported.
- * Maintaining proper hygiene is better.
- * Avoid playing outdoor games until the situation comes to under control. Play indoor games.

* Please be self quarantine if you are came from virus affected areas or in contact with the people who came from there.

* When you cough/sneeze use your elbow near the mouth and nose instead of hand.

* Clean floor using common household disinfectant.

* Always check the updates on covid-19 from news papers, television and govt. etc.

* Do not spread fake news.

* For any queries and information contact govt. helpline numbers 1075.

The things that we should not do are,

* Don't have a close contact with anyone, if you are experiencing cough and fever.

* Don't touch your eyes, nose and mouth without washing your hands.

* Don't spit in public.

* Don't eat raw food.

* Don't eat fruits without washing in salt water.

* Don't visit friends and relatives who show flu symptoms.

Nowadays, government and doctors are advising to take good food and perform yoga to improve immunity levels in our body. This helps us to fight against COVID-19 with less drugs intake and less chance of death. The things include,

- * Eat healthy diet.
- * Taking plenty of fluids mainly water.
- * Eating eggs, chicken more which give more immunity power.
- * Do Yoga and meditation daily.

Even though, if you have symptoms like cough, fever, cold, difficult in breathing; Please contact helpline numbers given by the government. They will come and take you to the hospital.

Stay Home, Self Isolation, Stay Safe.

ASSIGNMENT-5

- ① who is the world's richest self-made woman? what is the name of the company she started? ~~success at work~~
Zhous Sunfei, the world's richest self-made woman. The company she started is the Lewis Technology and it counts 30 million dollars in Hong Kong among other acquisitions.
- ② Where is she most at home? what does it mean to say be most at home?
Most at home is a idiom which means feeling comfortable in the place where she works or goes frequently etc. as she was in home. In this context, it means that she mostly works and check the work at the floor of her factory where she dip her hands in a tray of water to ensure it is of the right temperature, or taking the place of one of her technicians for a while.

③ where was she born? what was her childhood like?

The youngest of three children, Qunfei was born in a tiny village in China. She lost her mother when she was five. Her father was a skilled craftsman. He lost his eyesight and a finger in a industrial accident. Young Qunfei helped her family raise pigs and ducks for their livelihood.

Despite being a brilliant student, Qunfei dropped out of school at the age of 16. She landed a job that required her to work from 8am to 5pm, polishing glass.

④ what does Lens Technology produce? who are its biggest customers?

When Qunfei had saved money, she took the help of her relatives and set up a workshop for making watch lenses. Much of what she knew about making lenses was self taught. She now began to try out different ways of improving the quality of the lenses that she sold. She began to acquire a reputation for making the finest watch lens available in the market.

The biggest customers of Lens Technology factory are mobile companies like, Motorola, HTC, Nokia and Samsung and Apple companies.

5) Why do you think Motorola approached Lens Technology and not any other lens maker?

When Qinfen set up a workshop for making watch lenses, she began to try out different ways of improving the quality of the lenses that she sold. She began to acquire a reputation for making the finest watch lenses available in the market. So, Motorola approached Lens Technology and not any other lens maker.

6) What are the processes that glass is put through in the factory? In the factory, glass is cut, ground down to size, bored and polished to give each plate a transparent finish. Then the plates are strengthened in a potassium ion bath, painted and cured. Finally, they are cleaned and coated with anti-smudge and anti-reflection films.

Q) what are the factors that helped make Ms Zhou successful?

Her determination, hard work and her contribution to the work; she is very hands-on with her job, made her successful. She still tours the factory floor and sits down at the machines to work them herself. This is her way of finding any faults in the process of equipment that are in use.

These are the factors, that helped Ms Zhou to be successful.

Q) How does Lens Technology remain as a Tier-one player in the market today?

Ms Zhou always tried to improve the quality of the lenses that she sold. She then began to acquire a reputation for making the finest watch lens available in the market.

This made the top mobile companies like Motorola, HTC, Nokia, Samsung and Apple to place orders with her. This made Lens Technology still remains a tier-one player in the market today.