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EDITORIAL

Dear learners,

Learning is a continuous process, which involves thinking, articulating, storing, remembering, using, parting and so on. Everyone learns, relearns and unlearns. It becomes an asset for the life. This can never be stolen and it cannot be bought too. It can only be gained. There are lots of ways by which one attains knowledge. What one attains, becomes ornament that shines and is part of one's own life. This is what makes one's life fruitful. To be fruitful one needs to be laborious. If one has gained something through easy means that will not sustain for a long period of time. Therefore, be a learner to be productive member of the society to think, to articulate, to store, to remember, to use, to impart by equipping oneself with the required skills. Proper learning creates lot of opportunities and these would lead to dispel the ignorance and would light up knowledge.

To be a help by being by your side to make your labour easy, we are presenting our humble effort in the form of a magazine named 'EDUMATE'. This is a collective endeavour to reach to the aspirants to make the study easier and also to let you know the day to day affairs. We have tried our level best to incorporate everything required to make a student's study process easy and effective. If our efforts stand helpful for your studies then the herculean task that we started will be fruitful.

No doubt this creative endeavour will bring about an array of knowledge bearing sweetest fruit ever. Let the knowledge sown today bring forth its best fruit with the help of 'EDUMATE'.

To you from us with love...

Geo John
Chief Editor

Life ... Love... Learn... to be a Change



FR. SIJU JOHN, M.A., M.Ed.

‘You must be the change you wish to see in the world’, one of the perfect words of Gandhiji in this new modern fast moving world when everyone wants to perceive changes and fetch changes in the life of others but not in oneself. We call for changes in life and no one would like to be idle in his/her life. We do apply certain words often in our conversation and they are life, love and learn.

LIFE.....

“Twenty years from now you will be more disappointed by the things you didn’t do than by the ones you did do. So throw off the bowlines. Sail away from the safe harbor. Catch the trade winds in your sails. Explore, Dream, Discover.” – Mark Twain.

The American writer’s words about life have a lot of relevance for today’s young buds. Life is to be explored in all meaning. It’s not a free gift but heavily compensated by our dear parents, our visible gods on earth. Every player has a coach but the coach is not always a better player. We have to explore ourselves and to explore we need to dream and discover. Every unearthing initiate with a dream and a better dreamer discovers better. Discovery begins from within and why don’t we take a step forward; a step which is rare, bold and distinctive.

LOVE

“Love is an untamed force. When we try to control it, it destroys us. When we try to imprison it, it enslaves us. When we try to understand it, it leaves us feeling lost and confused.” Paulo Coelho

The Brazilian novelist says that the love is a force. The force, which comes from the heart, penetrates the hearts of others and is the germ of life. It cultivates the worth of life and our young buds have to get the imprint of this precious germ. Today the world is more educated but has less common sense, more degrees but has less capacity of judgment, bigger houses but has small families, big personalities but has less character, spends a lot but has less happiness and conquered the whole world but has lost the germ of life i.e. love. We, the human beings, try to dominate but love cultivates peace which frees us from the burden and pains of life. Let our educators, parents, peer groups, friends and so on nurture the germ of life to our young buds. We can cultivate it by giving a feather touch of love.



LEARN

‘By three methods we may learn wisdom: First, by reflection, which is noblest; Second, by imitation, which is easiest; and third by experience, which is the bitterest.’ – Confucius

The Chinese philosopher says that the toughest way of learning is by experience. A blind person makes a decision after experiencing. He sees the things through his heart because only his eyes are closed not his heart/mind. We have to keep our hearts open to learn by experience and learning through heart is love. The more I read, the more I acquire but the more I love, the more I learn to live. The most precious learning is learning of the meaning of love since all learning has an emotional base. We must learn to live together than learning various languages and sciences. The standard of living is what we have but the standard of life is what we give from our heart.

BE A CHANGE

“The secret of change is to focus all of your energy not on fighting the old, but on building the new.”-Socrates

To be a change, we need to have clarity of mind and heart and this clarity is acquired through life, love and learning. In order to be a change or revolutionary one must have the vision and heart of a giraffe. Giraffe has a small, powerful, supercharged heart that is different to that possessed by other similar animals and has a holistic vision from above. We obtain speed in life by technology but the direction has to be from a heart which has knowledge by experience. Let us direct our young buds from our experienced hearts to bring changes in their life and lives to come. Therefore we shall lead a simple life but a rich burial by the triumph of our life.

GET UP

FROM THE FALL TO WIN



GEO JOHN, M.A., B.Ed.

INTRODUCTION

The moment one thinks about one's own capabilities and is confident about the caliber, he/she will emerge as victorious. Success is the result of positivity. When a person is positive and is with wonderful courage to take up risks can taste triumph and when one is passive and do nothing productive will have a great fall and that would be irreversible. Being positive will make great things possible to those who don't stop believing in oneself, trying something new or better and learning to be different. Be inquisitive to be different, and if you want to be different you need to be different. Being inquisitive will open up to new ideas and these ideas will sprout, grow and yield fruits.

Be curious to win

It is necessary to be curious and curiosity according to Ian Leslie is a combination of intelligence, persistence and hunger for novelty, all wrapped up in one. In order to improve curiosity and wonder one needs to read widely and should follow one's interests. It is said that when you are running into something interesting, drop everything and study it. The feeling of being interested can act as a kind of neurological signal, directing us to fruitful areas of inquiry.

Be thirsty to accomplish your target

The thirst to have fruitful enquiry will lead to fill up and accomplish the target. It will also help one to polish mind with the minds or thoughts of others. One can always be benefitted with the progressive ideas of others. It simply means to consult with the experts to be experts. These ideas will either support or would leave the spark to think what is next. If your ideas can get wings using others' thoughts there is no wrong in it but one should make sure that it is productive and never be destructive.

Do not take up shortcuts

We have crippled ourselves in finding out shortcuts in every way possible. Though we have the potential source, we do not want to rely on anything that would demand time. Even any kind of information we require is to be available at our finger tips, if not, it is very difficult to pass moments. Today's generation is born to Google. In the era of Google searches, we have no problem finding the exact answer to our questions, but by chance likely to encounter information that is not specific or relevant to our question or queries. It is said that a serendipity deficit makes innovation harder, because innovation relies on unexpected collision of

knowledge and ideas. So, it is the fact that we don't exactly get the answers perfect for our questions.

Give wings to your passions

All what you do might be meaningless or absurd for the people watch you from far, but you should never allow your passion and interests to die. Once they are no more with you, then the life will be pathetic and difficult to pursue. On the go there are chances, where you might fall down many times but your passion and interests would be your help in standing on your own foot. You must keep your passion alive and no outer forces can have access on you. This must be your strength to get up from the fall. Falling down would give us experiences and these experiences are the driving forces to stand up. An ant while carrying the grain might fall down many times but it will not stop carrying grains because of the fear of falling down. Life is similar to this. If one wants to sustain life, then it is necessary to have lots of experiences of falling down and getting up. Learn lessons from every instance of your life and this would be a force to live on.

Conclusion

I am the master of my life and everything that is required to stand on my own foot it's within me. If I am able to stand to be different by being curious to win starts my auspicious time and this so called auspicious time is within and will be out of your reach if you are to search elsewhere. Do not be satisfied with the knowledge you have but equip and update yourself at every moment by not taking the shortcuts to win rather shed your perspiration for your cause. If you are determined you will never at the place where you fell but you would fly to the heights by the wings that are created by you to win always.



MY CAREER: THE PATH FINDER



SHAJU JOSEPH, M.A., M. Phil., B. Ed., MBA

Choosing a career after schooling is considered to be the most important activity in a student's life. But the question that baffles everybody is, '**What to choose?**' and '**How to choose?**' Unfortunately these questions remain unanswered in most of the children's lives. The reason...?

In a world where the children get everything 'readymade', this problem is bound to happen. In a world where the children are just taught about the price of things and not the value, this is bound to happen and in a world where the children are not taught to take up the responsibilities or face the challenges and stand on their own legs, this is bound to happen. The parents- especially our (Indian) parents are so concerned about their children's future that they want to have everything ready for them as they grow up and finally a high profile blue collar job with a fat six/ seven digit pay cheque. Once they achieve this – the parents are happy and content that their son/ daughter is well settled.

It looks good and everybody is fine with it. Moreover this is what 90% of the present generation wants. Gradually what happens is – they get fed up with the unending stress related to work, meeting the targets, satisfying the boss etc. In the struggle to keep up with the expectations of the employers and the society, they forget their family life, their children's social and emotional growth, the spouse, the parents and relations. Not only that the extreme stress makes the person mentally and physically tired. The rest of the life is spent going to the hospitals, eating loads of medicines as food etc. or to make things worse, he/ she may get into depression or even commit suicide.

How do these things happen? Was this what was envisioned? Was it the destiny / the life parents wanted the children to have?

No- Obviously No is the answer. Then Why ...? why should this happen? Let us look back to the two questions that we left behind – **What to choose? and How to choose?**

These two questions are quintessentially important because a choice that one makes at a critical point of time makes all the difference. Every apprentice searching for a happy life, should earnestly work on What to Choose- not choose what they have been told to by the parents ,

relatives or the so called well- wishers or not a career to satisfy your parents or your own social status. The choice should ultimately based on your own interests , your own passion and your own heart's desire - failing in which whatever you do will become just a job , a burden and it will never make you happy.

As we discussed, what to Choose entirely depends on your passion, love, affinity and attachment. Your parents / teachers can surely guide you or support you but make sure you be the decision maker. When you go after what you are passionate about, you are bound to enjoy what you do. It will never be a burden for you or even a 'work' for you but it will be the most interesting activity, or 'time pass' for you as you get completely involved in it. As the maxim goes 'Do what you love and Love what you do'.

In the words of Dr. A P J Abdul Kalam, 'If you do what you love, you don't need to work even a single day in your life. So it becomes imperative to make a correct choice before selecting a particular profession.'

Now let's discuss how to identify your passion, your interest or what to do with your life. I hope the following questions will help you to make the choice. Ask yourself the same/ similar questions.

- What do I enjoy doing?
- What kind of activities are fun and fulfilling for me?
- What am I good at?
- What Skills do I have to excel in what I do?
- What are my capabilities?
- What are my drawbacks and what do I do to improve upon them?
- How much time do / can I spend to sharpen my skills?
- How confident am I?
- How strong is my Intrapersonal as well as my Interpersonal skills?
- Am I willing to / able to face the challenges that emerge in this field?

If you are able to find satisfying answers to these questions, be sure that you are on the right track. Develop a strong proactive mindset and 'Never say Die' attitude and an unrelenting thirst to achieve what you value the most and it will surely make your life and you will be happy and your life will be meaningful. As Swami Vivekananda reminds us " Arise, awake and stop not until the goal is reached".



RESOURCES AND DEVELOPMENT

1. INTRODUCTION

Everything available in our environment which can be used to satisfy our needs can be termed as a resource.

Some conditions

- Technologically accessible
- Economically Feasible
- Culturally Acceptable
- Human beings interact with nature through technology and create institutions to accelerate economic development..
- Resources are a function of human activities.

2. TYPES OF RESOURCES

- Classification of Resources
- Origin
- Exhaustibility
- Ownership
- Status of Development

Origin

Biotic Resources Abiotic Resources

1. Biotic Resources are resources derived from the biosphere such as living things and from forest and the materials derived from them. This mainly includes fossil fuels like, Petroleum, Coal, and Gas etc.
2. Abiotic means other than living things non living things Example- Fresh Air, Land, Heavy Metal etc.

Exhaustibility

Renewable Resources NonRenewable Resources

- Renewable resources are those whose quantity is not reduced due to use and which can be repeatedly used without fear of exhaustion are termed as renewable resources. Example – wind, water, forests etc.
- Non Renewable resources are substances whose stock gets reduced and are gradually exhausted with use are termed as Non-renewable resource. They are exhaustible resources. Example: Fossil fuels like coal, petroleum and minerals.

Ownership

Individual Resources Community Resources National Resources International Resources

1. Individual Resources :

Owned privately by individual
e.g.: Plots, house, car, wells etc.

2. Community Resources: Accessible to all the members of the community
e.g.: Public Parks, Picnic Spots, and Playgrounds etc.

3. National Resources: Technically, all the resources available in the country are national resources.
e.g.: Forests, wildlife land divisions and political territories.

4. International Resources: The oceanic resources beyond 200 KM of the exclusive economic zone belong the international.

Status of Development

Potential Developed Stock Reserves

1. Potential: Which have been found in a region but have not been yet utilised.
2. Developed: Which are surveyed and their quality, quantity has been determined for utilisation.
3. Stock: Which have the potential to satisfy human needs but they do not have appropriate technology to access them.
4. Reserves: Can be put into use with the help of technical know- how but their use has not been started.

Development of Resources

Major problems and need for sustainable development.

Accumulation of resources in few hands dividing the society in 'haves' and 'have not's'.

Indiscriminate use of resources leading to global warming, ozone layer depletion and environmental pollution, land degradation.

Resource planning needed for sustainable existence of all forms of life.

Sustainable economic development is the development that should take place without damaging the environment.

The first international earth summit held in Rio de Janeiro in 1992 attended by 100 countries.

Adopted Agenda 21 to achieve global sustainable

development and to combat poverty, diseases from the world.

.....
Need for resource planning

There are regions which are rich in certain resources and deficient in some other resources

Arunachal Pradesh has abundance of water but lacks infrastructural development.

Rajasthan has abundance of solar and wind energy but lack in water resources.

Resources planning in India

A complex processes involving three processes.

Identification and inventory of resources.

Evolving a planning structure.

Matching the resources development plan with national development plans.

Five year plans launched after independence.

Indian resource development depends on technology, quality of human resources and historical experience of people

Conservation of resources

Vital for any development activity

Irrational consumption and overutilization lead to socio-economic and environmental problems.

Land Resources

Importance of land

Perform all economic activities on land

It's a natural resource supporting natural vegetation, wildlife, economic activities, and transport and communication system.

An asset of a finite magnitude.

.....
Relief features

Variety relief features in India

Plains – covering 43% area

Mountains covering 30% area

Plateaus covering 27% area

Possesses rich resources in all these relief features.

.....
Land utilisation

Forests

Land not available for cultivation Barren and waste land

Permanent pastures and grazing land

Land under miscellaneous trees and cultural wastelands.

Follow lands and net sown area.

Land Resources

Land use pattern of India

Determined by both physical and human factors

Land use data available only for 93% area.

.....
Land degradation

Degraded land 130 million hectare, 28% forest degraded, 56% water eroded, certain human activities

Mining sites are abandoned.

Over grazing and over irrigation is responsible for alkalinity.

Mineral processing like cement Industry, industrial effluents.

.....
Conservation of land

Afforestation and proper management of grazing lands

Planting of shelterbelts.

Control on overgrazing.

Thorny bushes to stabilise sand dunes

Control on mining Activities

Proper discharge and disposal of Industrial effluents

Soil as a Resource

Soil is the most important renewable natural resource. It is the medium of plant growth and supports different types of living organisms on the earth.

Classification of soils

1. Alluvial soil :

- i. The entire northern plains are made up of alluvial soils.
- ii. These have been deposited by these important Himalayan River System
Indus Ganga Brahmaputra
- iii. Alluvial soil is also found, in the eastern coastal plains particularly in the deltas of Mahanadi River, Krishna River, Godavari River, kaveri River.
- iv. The Alluvial soil consists of various proportions of sand, silt and clay.
- v. Alluvial soil are described on the basis of their age.
 - Old banger
 - Has higher concentration of Kanker Nodules
 - Less fertile than Khadar
 - New Khadar
 - Has less concentration of Kankar Nodules than banger
 - Is more fertile than banger
- vi. Mostly these soils contain adequate proportion of potash, phosphoric acid and lime which are ideal

for the growth of sugarcane, paddy, wheat and other cereal and pulse crops.

Black Soil

1. These soils are black in colour and are also known as 'regur' soil.
2. They are ideal for growing cotton and is also known as black cotton soil.
3. This type of soil is typical of the Deccan trap (Basalt) region, spread over northwest Deccan Plateau and is made up of lava flows.
4. The black soils are made up of extremely fine i.e. clayey material.
5. These soils are strictly when wet and difficult to work on unless tilled immediately after the first shower or during the pre- monsoon period.

Red and yellow soils

1. Red soil develops on crystalline igneous rocks in areas of low rainfall in the eastern and southern parts of the Deccan Plateau.
2. Yellow and red soils are found in parts of Orissa, Chhattisgarh, southern parts of the middle Ganga plain and along the piedmont Zone of the Western Ghats.
3. These soils develop a reddish colour due to diffusion of iron in crystalline and metamorphic rocks.

Laterite Soil

1. The laterite develops in areas with high temperature and heavy rainfall.
2. This soil is suitable for cultivation with adequate doses of manures and fertilizers.
3. These soils are mainly found in Karnataka, Kerala, Tamil Nadu; this soil is very useful for growing Tea and Coffee.

Arid Soils

1. Arid soils range from red to brown in colour.
2. They are generally sandy in texture and saline in nature.
3. In some areas the salt content is very high and common salt is obtained by evaporating the water.
4. The bottom layer of Kankar restricts the infiltrating the water.
5. After proper irrigation these soils become cultivable as has been in the case of western Rajasthan.

Soil Erosion

1. Denudation of soil cover and subsequent washing down is called soil erosion.
2. Due to human activities like deforestation, overgrazing, construction and mining.

3. Natural forces like wind, water, glacier and water lead to soil erosion.
4. Running water cuts through clayey soil and form gullies.
5. Also caused due to defective method of farming ploughing in a wrong manner.

Soil Conservation

1. Ploughing along contour lines – Contour ploughing.
2. Steps can be cut on slopes – Terrace Farming
3. Strips of grass are left to grown between crops called – strip cropping.

Project/ Activity

1. Make a project showing consumption and conservation of resources in your locality.
2. Have a discussion in the class – how to conserve various resources used in your school.
3. Imagine if oil supplies get exhausted how this will affect your life style.

Multiple Choice Questions

1. Everything available in our environment to satisfy our needs is termed as
 - a. Technology
 - b. Resource
 - c. Natural vegetation
 - d. None of these.
2. Resource planning is essential for existence of all forms of life.
 - a. Ecological balance
 - b. Sustainable
 - c. Exploitation
 - d. None of these
3. Where was the first international Earth summit held?
 - a. Rio-de-janerio
 - b. Geneva
 - c. Switzerland
 - d. Philippines
4. Which one of the following type of resource is iron ore?
 - a. Renewable
 - b. Biotic
 - c. Flow
 - d. Non renewable
5. In which one of the following states is terrace cultivation practised?
 - a. Punjab
 - b. Plains of Uttar Pradesh
 - c. Haryana
 - d. Uttarakhand

Very Short Answer Type Questions

1. What is a resource? Give two examples.

Answer : Everything available in our environment which can be used to satisfy our needs, provided it is technologically accessible, economically feasible and culturally acceptable can be termed as resource. Coal, water, air, minerals etc. are some examples of resource.

2. How can the resources be classified on the basis of origin?

Answer : Biotic and Abiotic

3. How can the resources be divided on the basis of exhaustibility?

Answer : Renewable and non renewable

4. Name any two states of India which are well endowed with solar energy

Answer : Gujarat and Rajasthan

5. What is the total geographical area of India?

Answer : 328 million sq.km.

6. What is wasteland?

Answer : An unused area of land like rocky, arid and desert areas.

7. What is gross sown area?

Answer : This represents the total sown area once or more than once in a particular year that is the area is counted as many as times as three all sowings in a year.

8. What are biotic resources?

Answer : These are obtained from the biosphere and have life such as human beings, flora and fauna, fisheries, livestock etc.

9. Name any two states where over irrigation is responsible for land degradation.

Answer : i) Punjab ii) Haryana

10. Name any two crops associated with laterite soil

Answer : Tea and Coffee

11. What is wind erosion?

Answer : Wind blows loose soil off flat or sloping land. This is known as wind erosion.

12. What is bad land?

Answer : It is a land which is unsuitable for cultivation. Mainly soil erosion converts a fertile land into a bad land.

13. What is gully erosion?

Answer : Gully erosion takes place when running water cuts deep reulines in the absence of vegetation. This type of erosion makes soil unfit for cultivation.

14. Which soil is the most widely spread in India?

Answer : Alluvial soil.

Short Answer type questions

1. What is stock? Give two examples.

Answer : These are materials in the environment which have the potential to satisfy the human needs but could not be used as the human beings do not have the appropriate technology to convert them into usable form. For example, water (H₂O) is a compound of two inflammable gases that is hydrogen and oxygen but human beings do not have the required technology to use them as a source of energy.

2. Explain the role of humans in resource development.

Answer :

- Resources are a function of human activities.
- Human beings interact with nature through technology, and create institutions to accelerate their economic development.
- Human beings transfer materials available in our environment into resources and use them.

3. What are reserves?

Answer : Reserves are the subset of the stock, which can be put into use with the help of existing technical 'know how' but their use has not been started. These can be used for meeting future requirements. River water can be used for generating hydroelectric power but presently, it is being utilised only to a limited extent. Thus, the water in the dams, forests etc. is a reserve which can be used in the future.

4. What are international resources?

Answer : Resources which are found in a region, but have not been utilised due to lack of capital or other reasons. For example, the western parts of India, particularly Rajasthan and Gujarat, have potential for the development of wind and solar energy, but so far these have not been developed properly.

5. "India is rich in certain types of resources but deficient in some other resources." Support your answer with examples.

Answer :

- The states of Jharkhand, Chhattisgarh and Madhya Pradesh are rich in mineral resources but lack industrialisation.
- Arunachal Pradesh has an abundance of water resources, but lacks in infrastructural development. The state of Rajasthan is very well endowed with solar and wind energy, but lacks in water resources. The cold desert area of Ladakh is relatively isolated from the rest of the country due to lack of means of transportation and communication.
- Most of North-Eastern states are rich in natural vegetation but lack in fertile soil.

6. Explain the major factors which are responsible for the formation of soil.

Answer :

- Relief, parent rock or bedrock, climate, vegetation and other forms of life and time are important factors in the formation of soil.

- ii) Various forces of nature such as change in temperature, actions of running water, wind and glaciers, activities of decomposes etc. Contribute to the formation of soil.
- iii) Chemical and organic changes which take place in the soil are equally important.
- iv) Soil also consists of organic (humus) and inorganic materials.

7. Mention the criteria on the basis of which Indian soils can be classified.

Answer : i) Factors responsible for soil formation

- ii) Colour iii) Thickness iv) Texture
- v) Age vi) Chemical and physical properties.

8. Mention the factors on which the land use pattern of India depends upon.

Answer : The use of land is determined by physical as well as human factors.

- i) **Physical factors :** Topography, climate and soil types
- ii) **Human factors :** Population density, technological capability, culture and traditions.

Long Answer type Questions

1. What is resource planning? Mention the steps which are involved in resource planning.

Answer : "Resource planning is a technique on skill of proper or judicious use of resource"

Resource planning is a complex process which involves:

- i) Identification and inventory of resources across the regions of the country. This involves surveying, mapping, qualitative and quantitative estimates and measurement of the resources.
- ii) Evolving a planning structure endowed with appropriate technology skill and institutional set up for implementing resources development plans.
- iii) Matching the resources development plans with overall national development plans.

2. Explain the classification of resources on the basis of exhaustibility.

Answer :

- i) Renewable resources: "Renewable resources are the natural resources which can be used again and again or can be reproduced by physical, mechanical and chemical processes" Solar energy, air, water and soil are some of the renewable resources of energy.
- ii) Non - renewable resources: "Non-renewable resources are the natural resources that cannot be replaced at all or within a reasonable time". Fossil fuels such as oil, gas and coal are examples of non-renewable resources. These resources are accountable over millions of years. They are

considered to be non-renewable resources because once they are used up, they are gone forever.

3. Explain the classification of resources on the basis of ownership.

Answer :

- a) Individual Resources : Resources which are owned by private individuals are known as individual resources, plots, fields, houses can book etc. are some examples of individual resources.
- b) Community owned resources : The resources which are accessible to all the members of the community are known as community resources, village ponds, public park, playground, etc. are some examples of community resources.
- c) National resources : All the resources which are under the control of state or union government are known as national resources. All the resources within political boundaries are national resources became the government has the power to acquire even the private properties.
- d) International Resources : These resources are owned and regulated by international institutions. The oceanic resources beyond 200 km of the exclusive economic zone belong to the open ocean, and no individual country can utilize these without the convergence of international institution. India has got the right to money manganese nodules from the bed of the Indian Ocean from that area which lies beyond the exclusive economic zone.

4. Suggest any three measures of soil conservation

Answer : Proper farming techniques used for soil cultivation are:

- i) Crop rotation : If the same crop is sown in the same field, year after year, this consumes certain nutrients from the soil making it infertile crop rotation can check this type of erosion.
- ii) Settled agriculture: Checking and reducing shifting agriculture by persuading the tribal people to switch over to settled agriculture.
- iii) Terracing and contour bunding : Terracing and contour bunding across the hill slopes is a very effective, and one of the oldest methods of soil conservation. Hill slope is cut into a number of terraces having horizontal top and steep slopes on the back and front contour bunding involves the construction of bank along the contour.
- iv) Strip cropping : Large fields can be divided into strips. Strips of grass are left to grow between the crops. This breaks, cop the force of the wind. This method is known as strip cropping.
- v) Shelter Belt: Planting lines of trees to create shelter also works in a similar way Kow of such trees are called shelter belts. These shelter belts have contributed significantly to the stabilisation of sand dunes and in establishing the desert in western India.

AGRICULTURE

1. INTRODUCTION

India is an agriculturally important country two – thirds of its population is engaged in agricultural activities. Agriculture is a primary activity, which produces most of the food that we consume. Besides food grains, it also produces raw materials for various Industries.

Types of farming

- Primitive subsistence farming
 - Intensive subsistence farming
 - Commercial farming
1. Primitive subsistence farming: These types of farming are practised on small patches of land with the help of primitive tools like hoe, Dao and digging sticks. It is a 'slash and burn' agriculture.
 2. Intensive subsistence farming: This type of farming is practised in areas of high population pressure on land. It is a labour intensive farming where high doses of biochemical inputs and irrigation are used for obtaining higher production.
 3. Commercial farming: the main characteristics of the type of farming are used of higher doses of modern inputs e.g.: high yielding variety (HYV) seeds, chemical fertilizers, insecticides and pesticides in order to obtain higher productivity.

Three main crop season of India

Kharif - Rabi - Zaid

1. **Kharif** – It starts with the onset of monsoon and continues till the beginning of winter (June-July to September – October) The Kharif crops include rice, maize, millet, cotton, jute, groundnut, moong, urad etc.
2. **Rabi** – It starts with the beginning of winter and continues till the beginning of summer (Oct-Dec to April June). The rabi crops include wheat, barley, gram and oilseeds..
3. **Zaid** – This is a short crop season in between the rabi and Kharif seasons. Crops like watermelons, cucumber, some vegetables and fodder crops are the major crops.

Major crops of India

1. Rice :

- i. It is the staple food crop of a majority of the people in India.
- ii. It is a Kharif crop which requires high temperature and high humidity with annual rainfall above 100cm
- iii. Rice is grown in the plains of North and north eastern India, coastal areas and the deltaic regions of canal irrigation and tube wells have made it possible to grow rice.
- iv. In areas of less rainfall such as Punjab, Haryana and

western U.P. and parts of Rajasthan.

2. Wheat:

- i. It is the main food crop in north and north western part of the country.
- ii. This rabi crop requires a cool growing season and a bright sunshine at the time of ripening.
- iii. It requires 50-70 cm of annual rainfall.
- iv. There are two important wheat growing zones in the country.
- v. The Ganga Satuj plains in the North West and black soil regions of the Deccan.
- vi. The major wheat producing states are Punjab, Haryana, U.P., Bihar, Rajasthan and parts of Madhya Pradesh.

3. Millets:

- i. Jowar, Bajra and ragi are the important millets grown in India.
- ii. It is a main food crop mostly grown in moist areas which hardly needs irrigation.
- iii. Rabi is a crop of dry regions and grows well on red, black, sandy, loamy and shallow black soils.
- iv. Karnataka is the largest producer of ragi followed by TamilNadu.

4. Maize :

- i. It is a crop which is used both as a food and fodder.
- ii. It is a Kharif crop which requires temperature between 21°C to 27°C and grows well in old alluvial soil.
- iii. Major maize producing states are Karnataka, U.P., Bihar, Andhra Pradesh and Madhya Pradesh.

5. Pulses :

- i. India is the largest producer as well as the consumer of pulses in the world.
- ii. These are the major source of protein in vegetarian diet.
- iii. Major pulses that are grown in India are tur, urad, moong, masur peas and gram.
- iv. Pulses need less moisture and survive even in dry conditions.
- v. Major pulses producing states in India are Madhya Pradesh, U.P., Rajasthan, Maharashtra and Karnataka.

Non food Crops

- Rubber - Fibre Crops - Cotton - Jute

1. Rubber:

- i. It is an equatorial crop

- ii. But under special conditions it is also grown in tropical and sub tropical areas.
- iii. It requires moist and humid climate with rainfall of more than 200cm and temperature above 25°C
- iv. It is mainly grown in Kerala, Tamil Nadu, Karnataka and Andaman and Nicobar Islands and Garo hills in Meghalaya.

2. Fibre Crops:

- i. Cotton, Jute, hemp and natural silk are the four major fibre crops grown in India.
- ii. The first three are derived from the crops grown in the soil; the latter is obtained from cocoons of the silkworms fed on green leaves especially mulberry.
- iii. Rearing of silk worms for the production of silk fibre is known as sericulture.

3. Cotton :

- i. Cotton grows well in drier parts of the black cotton soil of the Deccan Plateau.
- ii. It requires high temperature, light rainfall or irrigation, 210 frost free days and bright sunshine for its growth.
- iii. It is a Kharif crop and requires 6-8 months to mature.
- iv. Cotton producing states are M.P., Karnataka, Andhra Pradesh, Tamil Nadu, Punjab, U.P. and Haryana.

4. Jute :

- i. It is also known as Golden fibre.
- ii. Jute grows well on well drained fertile soils in the flood plains where soil are renewed every year.
- iii. It requires high temperature.
- iv. Major Jute producing states are Bihar, Assam, West Bengal, Odisha, and Meghalaya.

Food Crops Other Than Grains

- Sugarcane - Oil Seeds
- Tea - Coffee

1. **Sugarcane:** it is a tropical as well as subtropical crop. It grows well in hot and humid climate with a temperature of 21°C to 27°C and an annual rainfall between 75 cm to 100cm. Irrigation is required in the regions of low rainfall. The major sugarcane producing states are Uttar Pradesh, Maharashtra, Karnataka, and Tamil Nadu, Bihar, Punjab and Haryana.
2. **Oil Seeds:** In 2014 India was the second largest producer of groundnut in the world after China. Ground Nut is a Kharif crop and accounts for about half of the major oilseeds produced in the country. Linseed and mustard are Rabi crops. Sesamum is a Kharif crop in north and Rabi crop in South India. Castor seeds are grown both as Rabi and Kharif crop.
3. **Tea:** Tea cultivation is an example of plantation agriculture. It is also an important beverage crop introduced in India initially by the British. Tea bushes require warm and moist free climate all through the year. Frequent showers evenly distributed over the years ensure continuous growth of tender leaves. Major tea producing states are Assam, hills of

Darjeeling and Jalpaiguri districts, West Bengal, Tamil Nadu and Kerala.

4. **Coffee:** In 2014 India produced 3.5 per cent of the world coffee production. Indian coffee is known in the world for its good quality. Initially its cultivation was introduced on the Baba Budan Hills and even today its cultivation is confined to the Nilgiri in Karnataka, Kerala and Tamil Nadu.

Technological and Institutional reforms

1. It was mentioned in the previous pages that agriculture has been practised in India for thousands of years.
2. Agriculture which provides livelihood for more than 60 percent of its population need some serious technical and institutional reforms.
3. Thus collectivisation, consolidation of holding, cooperation and abolition of Zamindari etc. were given priority to bring about institutional reform in the country after independence.
4. Kissan credit Card (KCC), Personal Accident Insurance Scheme (PAIS) are some other schemes introduced by the Government of India for the benefits of the farmers.
5. The government also announces minimum support price MSP remunerative and procurement prices for important crop to check the exploitation of farmers by speculators and middlemen.

Impact of Globalisation on Agriculture.

1. Globalisation is not a new phenomenon. It was there at the time of colonisation.
2. In the nineteenth century when European traders came to India, at that time too. Indian spices were exported to different countries.
3. Under globalisation particularly after 1990, the farmers in India have been exposed to new challenges.
4. Despite being an important producer of rice, cotton, rubber, tea, coffee, Jute and spices over agricultural products are not able to compete with developed countries.
5. Indian farmers should diversify their cropping pattern from cereals to high value crops.
6. This will increase income and reduce environmental degradation simultaneously.

Exercises

Project work

1. Group discussion on the necessity of literacy among farmers.
2. On an outline map of India show wheat producing areas.

QUESTIONS BANK

Very short Answer type questions

1. What is agriculture?

The art and science of cultivation soil, raising crops and rearing crops and rearing stock including animal husbandry and forestry.

2. Name any four agricultural products exported by India.

- | | |
|----------|----------|
| 1 TEA | 2 COFFEE |
| 3 SPICES | 4 JUTE |

3. What is primitive subsistence farming?

It is a type of agriculture / farming which is practised on small patches of land with the help of primitive tools like hoe, DOA, digging sticks and family/ community labour.

4. Name any four states which are the main producers of KHARIF crops.

- | | |
|------------------|---------------|
| 1 ASSAM | 2 WEST BENGAL |
| 3 ANDHRA PRADESH | 4 TAMIL NADU |

5. What is the period of kharif crops?

Kharif season starts with the onset of the beginning that is June- July and continues till the beginning of winter that is October – November.

6. Which country is the largest producer of rice in the world?

China

7. What is horticulture?

Intensive cultivation of vegetables, fruits and flowers is known as horticulture.

8. What is white Revolution?

Increase in production of milk is known as white revolution. It is also known as operation flood.

9. What is Gross cultivated Area?

The net sown area and the land cultivated more than once together make gross cultivated area.

10. Name any two dry crops?

Jawa, bajra.

11. What is dry land farming?

It is a type of farming which is practised in scanty rainfall areas and where irrigation facilities are inadequate. Example, cultivation of jawar and bajra.

12. Name two natural fibres except cotton.

Jute and flax

the beginning of winter that is October- November.

- c) **Zaid crops:** These are crops which are sown between the Rabi and kharif crops. Watermelon, musk melon, cucumber and vegetables are some examples of the zaid crops.

2. Mention any four features of the primitive's subsistence farming.

- Primitive's subsistence agriculture is practised on small patches of land with the help of primitive tools like hoe, Dao and digging sticks with the help of family/community labour.
- This type of farming depends upon the monsoon, natural fertility of the soil and suitability of other environmental conditions for the crops to be grown.
- Under this, farmers produce for self – consumption.
- Per hectare availability of land is very low.

3. What is intensive subsistence farming? Mention its two features.

This type of agriculture is practised in those areas or regions, or countries where the cultivable land is limited and the density of population is very high. Major features of intensive agriculture are;

- Per hectare yield is high.
- Farmers apply modern inputs like fertilizers, pesticides, high yielding varieties of seeds, etc., to obtain high yield.

4. What is the importance of rubber for the Indian economy?

- Rubber is an important industrial raw material.
- It is used in automobile industry.
- It is also the major input for the footwear industry.
- India earns foreign exchange by exporting raw rubber and rubber products.

5. Name any four factors that have distorted the cropping pattern in India

- High minimum support price.
- High subsidies for various inputs.
- Committed FCI purchases.
- Assured means of irrigation

6. Name the state which is the leading producer of rubber. Give two reasons.

Kerala leads in the production of rubber because:

- Rubber requires high temperature and heavy rainfall throughout the year.
- It requires cheap labour which is easily available in Kerala.

Short answer type questions

1. Define the following terms;

- Agriculture
 - Kharif crops
 - Zaid crop
- a) **Agriculture:** The art and science of cultivating soil, raising crops and rearing livestock including animal husbandry and forestry.
- b) **Kharif crops:** The kharif season starts with the onset of the monsoon that is June – July and continues till

Long answer type questions

1. Why subsistence agriculture is still practiced in certain parts of the country? GIVE four reasons.

A farming in which the main production is consumed by the farmer's household is known as subsistence farming.

INFO JUNCTION



February 01, 2020

MOHAMMED ALLAWI

One of the former communication ministers of Iraq, Mr. Mohammed Allawi was appointed as the Prime Minister of the country. Allawi has been appointed the Prime Minister of the Country amidst long protests that has so far killed 600 in the country.



March 30, 2020

NASA ANNOUNCES SUNRISE MISSION

NASA announced Sun Radio Interferometer Space Experiment (SunRISE) mission. The mission is to study about how sun creates Giant Solar Particle Storms. The SunRISE mission will provide information on how the Sun's radiation affects the space environment and to understand the working of the solar system. The study will also aid future astronauts mission.



February 25, 2020

MOHAMMED HOSNI MUBARAK

The Egypt ruler Mohammed Hosni Mubarak died at the age of 91. He served as the President of Egypt between 1981 to 2011.



March 30, 2020

RAJASTHAN STATEHOOD DAY

Rajasthan celebrates its Statehood Day on March 30 every year.

Popularly known as "Land of the Kings", the day is also called "Rajasthan Day". This year, the state was silent due to the lock down in the country. Usually there were radiant and invigorating events held all across



March 21, 2020

SATYARUP SIDDHANTA

The Indian Mountaineer Satyarup Siddhanta has entered 'Limca Book of Records'. He has set the record of becoming the first Indian to climb the highest volcano in the world. He already holds Guinness Book of World Records, India Book of Records, Asia Book of Records, British Book of records and Champion Book of Records.



March 28, 2020

EARTH HOUR

Since 2007, every year millions of people participate in the campaign called "Earth Hour" in March. This year, it was celebrated on 28 March 2020. It is a symbolic movement of "Lights OFF" to save the environment. The event is organized by the World wide Fund. The event was first started in Sydney, Australia. The aim of marking Earth Hour is to give attention towards global warming, climate change and loss of biodiversity. During the one-hour campaign, all over the world switch off lights and electronic items between 8:30 PM to 9:30 PM. The Earth Hour is held every year on the last Saturday of March.



April 7, 2020

WORLD HEALTH DAY

April 7 is marked as the World Health Day every year. The day is marked to celebrate the work of midwives and nurses for their role in keeping the world safety and healthy. This year, 2020, has celebrated as International Year of Nurses and Midwives. The World Health Day is marked by World Health Organization along with several other organizations. The theme of the World Health Day is selected by WHO. Theme of 2020: Support Nurses and Midwives.



March 29, 2020

AIR VICE MARSHALL CHANDAN SINGH RATHORE

The Mahavir Chakra recipient Air Vice Marshall Chandan Singh Rathore died at his Jodhpur residence. His services during 1962 war and 1971 war were impeccable. He was honored with Mahavir Chakra for the same.



APRIL 9, 2020

INDIAN RAILWAY AGAINST COVID 19

Apart from converting its coaches into hospital beds, the Indian Railways has also launched isolation wards. Around 3,250 coaches have been converted into isolation wards. It has recruited 2,500 temporary doctors and 35,000 paramedic staffs. Around 5,000 beds have been identified for treatment in railway hospitals.

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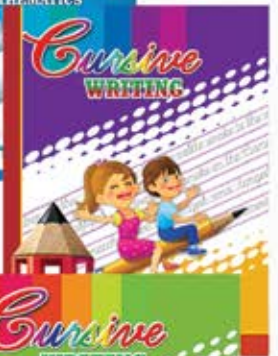
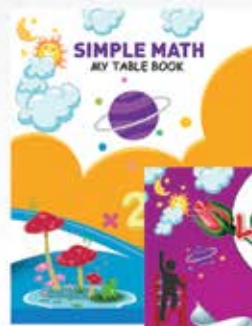
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