

# ECONOMICS

( Indian Economic Development )

Chapter 5: Human Capital Formation In India



## HUMAN CAPITAL FORMATION IN INDIA

### Physical capital:

It includes all those inputs which are required in the process of production, such as plant, raw materials, machinery, building etc.

### Human capital:

It refers to the knowledge, skill and efficiency of human beings in a nation at a point of time.

**Human Capital formation:** It is the process of acquiring and increasing the number of persons who have the skill, education and experience which are essential for the economic and political development of the nation.

### Sources of human capital formation:

- **Investment/ experience on education:** The most important source of human formation is to invest on the education system and training of people. Education enables an individual to make good living throughout his life. A good education system results in the overall development of the economy as education generates technical skills and creates a manpower which suits for improving the total productivity of the economy.
- **Expenditure on health:** 'Health is wealth' is an old saying which directly signifies that a healthy mind is much more effective and productive than a sick mind. Expenditure on health makes an individual more productive and hence it contributes more in the GDP of the nation.
- **On the job training:** It refers to the training of employees while they are performing a job. The concept of on the job training increases the productivity of labour and sharpens their skills as they work under professional guidance and with practical application. Moreover, it enables the workers to adapt new technologies and hence creates human capital.
- **Expenditure on information:** It contributes to human capital formation as it enables the utilization of inactive skills of the people or it facilitates better utilization of resources. People migrate from rural to urban areas in order to find better earnings and a good standard of living.

### Role of human capital formation in economic growth:

- **Increase production:** Human capital formation focuses on building a productive environment by providing skills and education to the people of the country. The productivity of the economy will automatically increase with increase in the level of education and skilled work force.

- **Raises life expectancy:** Human capital formation increased the life expectancy of the people. People migrate for better earning and quality of life.
- **Improves the quality of life:** People migrate for better earning and quality of life. The quality of life depends upon the level of education, health care facilitates, better working environment and good quality food. Human capital formation increases the quality of life of people of the economy.
- **Increases participation and brings equality:** Here participation refers to the percentage of labour force participating, the process of production. Human capital formation leads to enhancement of productive capacity of the labour which ultimately leads to greater employment and equality in the distribution of income and wealth.
- **Innovative skills:** With the increase in the number of skilled and trained workers, the possibilities of innovation also increase in the process of production. Innovation always plays a key role in the path of development of the economy and generation of income.

#### Problems facing in human capital formation:

- **Rising population:** Increasing population reduced the per head availability of existing resources and facilitates such as hospital, education, employment, water supply etc. The reduction in resource reduces the quality of life of the people.
- **Brain drain:** Skilled and technically efficient people migrate from India to foreign countries in search of better salaries and standard of life. This is a threat in the process of human capital formation for the country as it slows down the pace of development of the economy.
- **Insufficient man power planning:** One of the main causes of unemployment is the deficit of proper man power planning. There is always a gap between demand and supply of rising labour force in the country. Increase in the number of employment opportunities is far behind the number of available work force.
- **Inefficient education system:** Everything in the economy changes with the changing environment except the education system of our economy. The education system of our economy is around 100 years old, the number of universities increases with the great pace lacking behind the quality of education.
- **Insufficient on the job training in agriculture:** India is an agriculture based economy and yet agriculture does not received much attention in the area of professional skills. The concept of on the job training rarely applied in this sector which ultimately results in traditional methods of farming and low level of productivity.
- **Insufficient resources:** The amount of resources allotted for the development of human capital is very low as compared to actual amount of resources required. Due to this the resources remains inadequate and insufficient to for the formation of

human capital.

## Education sector:

An essential part of human capital formation Education refers to the process of teaching, training and learning especially in schools and colleges to improve knowledge and to develop skills Basically education is termed to be the most important part of human capital formation as it enables the people to change their outlook, become more efficient and to increase their productivity.

**In India the education sector has been developed since independence:**

### Elementary education:

- It covers the students from class 1 to class 8 (6-14 years).
- The number of primary and middle school (upto class 8) has increased from 2.24 lakhs in 1950-51 to 11.92 lakhs in 2011-12.
- Nearly 97% children receives elementary education.
- Government introduced various policies to strengthen elementary education such as Sarva Sikhsha Abhiyan, right to education, mid-day meal programme and so on.

### Secondary and senior secondary education:

- It covers the students from class 9 to class 12 (14-19 years)
- The number of Secondary and senior secondary school has increased from 7.4 thousands in 1950-51 to 2.32 lakhs in 2011-12.
- The number of students also increases from 15 lakhs in 1950-51 to 482 lakhs in 2011-12.
- An important role is played by Navodaya schools and kendriya vidhyalayas at central level.

### Higher education:

- The number of colleges (general) has increased from 578 in 1950- 51 to 35,839 in 2011-12.
- The number of universities has also increased from 27 to 665.
- The number of students getting higher education is about 130 lakhs (2011-12)
- The expenditure on education has also increased from 1.5% of GDP in 1950 to 3.1% in 2015-16.

## Important terms:

- **Gross enrollment ratio:** It refers to the number of students enrolled in school at several different grade levels (primary, middle and high school)
- **Literacy rate:** It refers to the percentage of people above 7 years who can read,

write and understand any one language. The literacy rate of India is approx 74.4%. Most literate state is Kerala with 93.9% whereas the least literate state is Bihar with 63.8%.

### Human resource development:

- It refers to the development of the set of individual that makes up the workforce of an organization business sector or economy. In India
- Ministry of education at the center and state level, NCERT(National council of educational research and training), UGC (University grant commission), AICTE (All India council of technical education) regulate the educational sector.
- Ministry of Health at the Union and the state level and ICMR.

### Summary:

- Physical capital
- Human capital
- Human capital formation
- Sources of human capital formation
- Investment/ expenditure on education
- Expenditure on health
- On the job training
- Expenditure on information
- Migration
- Role of human capital formation in economic growth
- Increases production
- Raises life expectancy
- Improves the quality of life
- Increases participation and brings equality
- Innovative skills
- Problems facing in human capital formation
- Rising population
- Brain drain
- Insufficient man power planning
- Inefficient education system
- Insufficient on the job training in agriculture
- Insufficient resources
- Education sector: An essential part of human capital formation

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### Determinants

- Expenditure on education
- Expenditure on wealth
- On - the-job training
- Study programs for adults
- Migration
- Expenditure on information

### Problems

- Rising population
- Brain drain
- Deficient manpower planning
- Insufficient on-the-job training in primary sector
- Low academic standards

### Role

- Optimum utilization of resources
- Higher productivity of physical capital
- Innovative skills
- Changes in the outlook of labour force

## Human Capital Formation In India

### Education Sector

### Achievements

#### Educational Attainment in India

SL. No	Particulars	1990	2000	2015
1.	Adult Literacy Rate (per cent of people aged 15+)			
1.1	Male	61.9	68.4	81
1.2	Female	37.9	45.4	63
2.	Primary completion rate (per cent of relevant age group )			
2.1	Male	78	85	94
2.2	Female	61	69	99
3.	Youth literacy rate (per cent of people aged 15 + to 24)			
3.1	Male	76.6	79.7	92
3.2	Female	54.2	64.8	87

### Future Prospects

- Education for all – Still a distinct dream
- Gender equity – Better than before and getting better
- Higher education - Indian education pyramid is steep indicating lesser and lesser number of people reaching higher education

## Important Questions

### Multiple Choice questions-

Q1. Which one of the following is a reason for poor human capital formation in India?

- (a) Brain drain
- (b) Insufficient resources
- (c) High growth of population
- (d) All of these

Q2. How much educational cess has been imposed by the government on all Union taxes?

- (a) 1 %
- (b) 2%
- (c) 4%
- (d) 5%

Q3. Which one of the following is a major source of human capital formation in the country?

- (a) Expenditure on education
- (b) Expenditure on infrastructure
- (c) Expenditure on defense
- (d) Expenditure on energy

Q4. The objective of midday meal scheme is .....

- (a) to boost universalisation of primary education
- (b) to boost the nutritional status of children in schools
- (c) to increase enrolment attendance and retention, and also improving the nutritional status of children in school
- (d) to boost universalisation of upper primary level of education

Q5. Which level of education takes a major share of total education expenditure in India?

- (a) Elementary
- (b) Secondary
- (c) Higher
- (d) Tertiary

Q6. What was the share of education in total government expenditure in 2014?

- (a) 7.92 percent
- (b) 15.7 percent
- (c) 0.64 percent
- (d) 3.31 percent

Q7. What percent of GDP was invested in education in the year 1952?

- (a) 7.92 percent
- (b) 11.7 percent
- (c) 0.64 percent
- (d) 3.31 percent

Q8. When was Right to Education Act enacted?

- (a) 2008
- (b) 2009
- (c) 2010
- (d) 2012

Q9. What was the average youth literacy rate in 2015?

- (a) 89.5 percent
- (b) 74 percent
- (c) 88 percent
- (d) 95.5 percent

Q10. Which of the following is not the role of on-the-job training?

- (a) Eradicates inequality
- (b) Encourages innovation
- (c) Promotes modern methods
- (d) Enhances productivity

Q11. Human capital consists of

- (a) Entrepreneurs
- (b) Both workers and entrepreneurs
- (c) Workers



(d) Entire population

Q12. The most important indicator of the status of education of a country is the

(a) Death rate

(b) Population rate

(c) Birth rate

(d) Literacy rate

Q13. Human capital is similar to physical capital because

(a) Both

(b) none

(c) They are factors of production

(d) Raise nation's ability to produce goods and services

Q14. The objective of midday meal scheme is .....

(a) to boost universalisation of primary education

(b) to boost the nutritional status of children in schools

(c) to increase enrolment attendance and retention, and also improving the nutritional status of children in school

(d) to boost universalisation of upper primary level of education

Q15. Which of the following is not an indicator of education level?

(a) Years of schooling

(b) Life expectancy

(c) Teacher-pupil ratio

(d) Enrollment rate

### Very Short:

1. Define human capital.
2. List the sources of human capital.
3. Why do individuals invest in education?
4. What is the main reason for rural-urban migration?
5. Define physical capital.
6. Define economic growth.
7. What are the indicators used to measure the health status of a country?

8. What percentage was set as the goal for expenditure on education?
9. What is the present literacy rate of India?
10. Name the institutions that regulate the education sector in India.

### Short Questions:

1. List the benefits of education.
2. Discuss the need for human capital.
3. What are the different forms of health expenditure?
4. Discuss the need for expenditure on information as a source of human capital.
5. What are the advantages of human capital formation?
6. "Higher income leads to high level of human capital." Comment
7. Discuss India's potential as a knowledge economy.
8. Give an account of government's expenditure on education.

### Long Questions:

1. Explain the role of human capital formation in economic development.
2. Briefly describe the two reports that point out the fact that further human capital formation in India will move its economy to a higher growth trajectory.
3. What are the objectives and functions of NCERT, UGC, AICTE and ICMR.
4. Suggest measures to reduce problems of human capital formation.
5. Explain the various sources of human capital.

### Case Study Based Question-

1. Read the passage carefully and answer the questions that follows:

The first ever Human Development Report (2001) of India has been released. It focuses on the vital-facts related to bureaucratic controls and poor governance of the country. The report was prepared by the planning Commission under the guidance of its Deputy Chairman, Mr. K.C. Pant. This 297-page document was released on April 23, 2002 and submitted to the Prime Minister. The report states that from 1983 to 1993-94, the Human Development Index (HDI) improved by nearly 2.6 per cent annum and by over 3 per annum during the period 1993-2001. Rural and urban areas have shown signs of improvement, according to the report.

Kerala, Punjab, Tamil Nadu, Maharashtra and Haryana have good HDIs. But states like Bihar, Uttar Pradesh, Madhya Pradesh, Rajasthan and Orissa have HDIs close to nearly one-half to that to Kerala. Funds must be distributed efficiently and effectively so that human development processes do not suffer according to the report.

India's growth in terms of HDI has shown dismal trends during the recent past. Lack of resources, communal feelings and illiteracy are the chief causes of decay of the average

Indian. Further, politicians, bureaucrats and other elements of the administration exploit the masses, executives, and business houses. The economic and political systems need serious transformations. The socio-cultural fabric of the nation cannot be weaved again because of religious compulsions. Ironically, we believe in religion so that our passage into the next world could be smooth and sans agonies. But we are least worried about our courses of action (and their outcomes) in this world. Religion often forces us to dominate other communities and sects. We attack them at opportune moments and face reprisals from them. This vicious cycle has been going on in India for the past 3,000 years. In order to develop the quality of life of Indians, the administration must become honest, efficient, productive and agile. Plant workers must increase productivity and eschew violence and strikes. Businessmen must conduct their business operations with honesty; they never do so. Further, political parties must guide the electorate and also, the masses towards prosperity and not chaos. Our psyche has to be changed; a change of government cannot lead us to a new era sans corruption and poor governance. Economic growth is linked to social growth, moral awareness, health and education. Every industrialist must work for the benefit of his or her nation. We have least interest in our nation and that is why, we are not receiving anything from her. The targeted rate of growth (of GDP) for the Tenth Plan is 8 per cent. However, the GDP growth rate during the Ninth Plan was a meagre 5.4 per cent. During the Eighth Plan, this rate was 6.7 per cent. How can we ensure consistent human development on a national scale if our results always fall short of targets. Our economy should grow at the rate of 7-8 percent. During 2001-02, it grew at the rate of 5.4 per cent.

1. Which state is lag in good HDI according to this report.
  - a. Punjab.
  - b. Kerala.
  - c. Bihar
  - d. Tamilnadu
2. When was first report on HRD was published.
  - a. In 1998
  - b. In 2000
  - c. In 2001
  - d. In 2005
3. What was the target for GDP Growth during 10th five year plan?
  - a. 5%
  - b. 7%
  - c. 8%
  - d. 10%
4. Which is not related with human capital formation.

- a. Education.
- b. Health.
- c. Skill.
- d. Internet.

5. India's HDI rank was too low because of:

- a. Poor literacy rate.
- b. Poor education facilities.
- c. Poor health services.
- d. All of the above.

2. Read the passage carefully and answer the questions that follows:

The objectives of public finance are to ensure macroeconomic stability, achieve the desired state of distribution, provide public services to accelerate growth and development. Fiscal policy has both macro and microeconomic aspects. Further, the objectives include allocating resources for the provision of public services. The important point is that ensuring security and protection of property rights is a basic public good and this can be provided only by the government. The governments have the task of distributing incomes and alleviating poverty.

After the Great Depression and influenced by Keynesian economics, public spending was assigned a central role. Thus, the role of public finance is inextricably linked to the role of the state. From merely ensuring safety, security and property rights, governments have expanded their activities to providing a variety of public services with externalities. The expansion has been a subject matter of debate. Musgrave considers that the expansion of the public sector has been a necessary and constructive development and strong public sector is needed along with the capitalist market. In contrast, Buchanan argues that dispute arises when the state expands to areas beyond the realm of boundaries of the protective state into a productive or tax-transfer state. In India, state intervention through public finance policy has to play an important role besides ensuring the safety and security of people and their property rights. These include the need to overcome large social and physical infrastructure deficit, provide correctives to missing and imperfect markets, introduce measures to reduce acute inequalities and poverty and provide correctives to widespread information asymmetry. Interventions are needed also to provide externalities in terms of market development, irrigation, storage and price support in agriculture to deal with market imperfections and supply volatility. Similarly, generalized externalities have to be ensured for the manufacturing and service sectors through competitive levels of infrastructure. India's public finance policies have enabled the government to play a catalytic role in the development of the economy as a whole. In addition over the years, there has been a significant increase in transfers from the government such as for employment guarantee and food security, national housing scheme, Swachchh Bharat Abhiyan, Ujjawala Yojana, Pradhan Mantri Kisan Samman Nidhi, periodic loan waives,

etc.

1. Which one of the following statements is correct?

- A. The expansion of the public sector has been a necessary and constructive development and a strong public sector is needed along with the capitalist market
- B. There are several reasons for the state to embrace a much larger role
- C. In India, state intervention through public finance policy has to play an important role
- D. Keynesian economics states that the state has to ensure full employment

Choose the correct answer from the options given below:

- a. A and B only
  - b. A, B and C only
  - c. A and C only
  - d. A, B, C and D
2. The statement, "Dispute arises when the state expands to areas beyond the realm of boundaries of the protective state into a productive or tax-transfer state", was given by:
- a. Musgrave
  - b. Keynes
  - c. Dalton
  - d. Buelatanan
3. Which one of the following objectives of public finance is NOT correct?
- a. Ensure macroeconomic stability
  - b. Ensure reduction of adverse balance of payments
  - c. Accelerate growth and development
  - d. Desired state of distribution
4. The externalities of the government intervention in the economy can be found in terms of:
- A. Market development
  - B. Money supply
  - C. Storage and price support in agriculture
  - D. Irrigation
5. Choose the correct answer from the options given below:
- a. C and D only

- b. A, B and D only
  - c. A, B and C only
  - d. A and D only
6. Which one of the following does NOT fall in the category of government transfers?
- a. National Housing
  - b. Swachchh Bharat Abhiyan
  - c. Periodic loan waivers
  - d. Education

### Assertion Reason Type Question-

1. In these questions, a statement of assertion followed by a statement of reason is given. Choose the correct answer out of the following choices.

- a. is True but (R) is False
- b. is False but (R) is True
- c. Both (A) and (R) are True and (R) is the correct of A
- d. Both (A) and (R) are True but (R) is not the correct explanation of (A)

**Assertion:** Indian economy is predominantly rural economy.

**Reasoning:** As per 2011 census, the country's rural population is almost 83.25 crore (68.8% of total population)

2. In these questions, a statement of assertion followed by a statement of reason is given. Choose the correct answer out of the following choices.

- a. is True, but (R) is False
- b. is False, but (R) is True
- c. Both (A) and (R) are True and (R) is the correct explanation of (A)
- d. Both (A) and (R) are True but (R) is not the correct explanation of (A)

**Assertion:** Literacy is a powerful instrument of socio-economic change.

**Reasoning:** Empowerment of women helps to reduce gender disparity.

### Answers key

#### MCQ answers:

1. (d) All of these
2. (b) 2%
3. (a) Expenditure on education
4. (c) to increase enrolment attendance and retention, and also improving the nutritional status of children in school
5. (a) Elementary

6. (b) 15.7 percent
7. (c) 0.64 percent
8. (b) 2009
9. (a) 89.5 percent
10. (d) Enhances productivity
11. (d) Entire population
12. (d) Literacy rate
13. (a) Both
14. (c) to increase enrolment attendance and retention, and also improving the nutritional status of children in school
15. (b) Life expectancy

### Very Short Answers:

1. Answer: Human capital is the stock of knowledge and skills that make the workers productive,
2. Answer: The sources of human capital are:
  - (i) Education
  - (ii) Health
  - (iii) On-the-job training
  - (iv) Labour market information
  - (v) Migration
3. Answer: Individuals invest in education to increase their future income.
4. Answer: Unemployment is the main reason for rural-urban migration.
5. Answer: Physical capital refers to the manufactured assets used in the process of production such as machinery, equipment, buildings, vehicles, etc.
6. Answer: Economic growth refers to the increase in real national income of a country.
7. Answer: The indicators used to measure the health status of a country are:
  - (i) Life expectancy rate
  - (ii) Mortality rate
8. Answer: It was set at 6 percent of the GDP.
9. Answer: The literacy rate of India (201 1-12) is 74 percent.
10. Answer: NCERT, AICTE and UGC regulate the education sector in India.

### Short Answers:

1. Answer: Following are the benefits of education:

- (i) It gives a better social status and pride.
- (ii) It enables wise decision-making.
- (iii) It enhances social outlook and develops understanding to accept the changes taking place in society.
- (iv) It stimulates innovations and facilitates adaptation of new technologies.
2. Answer: The population of the nation takes charge of all economic activities such as production, distribution and consumption. Human capital, therefore, may be recognized as one of the production factors, which can generate additional values. An economy needs sufficient human capital in the form of educated, trained and competent people to function and accomplish its goals. As we move deeper into a knowledge-based economy that depends on information, knowledge and high-level skills, human capital becomes increasingly important.
3. Answer: The different forms of health expenditure include expenditure on:
- Preventive medicine – medical practices which are designed to avoid or avert diseases
  - Curative medicine – health care practices that are used to treat patients with the intent of curing them, not just reducing their pain
  - Social medicine – medical practices concerned with the role of social factors in the occurrence, prevention and treatment of disease
  - Provision of clean drinking water
  - Good sanitation
4. Answer: People need to incur expenditure in order to acquire information related to equity markets, labour markets, education, health and other related markets. For instance, expenditure is incurred while collecting information related to education such form fees, transportation cost, consultancy fee, etc. Information plays an important role in making decisions regarding investments in human capital. Moreover, expense is incurred for efficient utilisation of the acquired stock of human capital. The money spent on obtaining information related to any kind of markets is a source of human capital formation.
5. Answer: The following are the advantages of human capital formation:
- It increases efficiency and income generating capacity of labour
  - It improves technical knowledge.
  - It enlarges the size of business.
  - It increases the level of production.
  - It changes social outlooks.
  - It decreases cost of production.
6. Answer: Higher income leads to development of high level of human capital and vice



versa. In other words, high level of human capital leads to growth of income. It is believed that even a large population, which is trained and educated, can become an asset in accelerating economic growth and ensuring social change in desired directions.

However, it is difficult to establish a relation of cause and effect from the growth of human capital to economic growth as the rate of growth human capital in developing countries has been faster than the rate of growth of per capita real income.

7. Answer: India has the potential to become a leading knowledge-based economy. With its youth population and growing information and communication technology (ICT) industry, India can become a major global knowledge-based economy. However, there is a need for measures such as:
- Supportive laws
  - Improved infrastructure
  - Removal of barriers to trade and investment
  - Up-skilling of labour force
  - Higher spending in research and development
  - Innovative financing for small businesses and enterprises

A shift to knowledge-based growth would help developing country like India avoid the middle-income trap and also address the issue of rising income inequalities.

8. Answer: During 1952-2014, education expenditure as percentage of total government expenditure increased from 7.92 to 15.7. As percentage of GDP, expenditure on education increased from 0.64% to 4.1 3% over the same period. However, the increase in education expenditure has not been uniform. The share of elementary education is the highest in the total education expenditure while that of higher/ tertiary education is the least.

### Long Answers:

1. Answer: The role of human capital formation in economic development is discussed below:
- (i) Increase in the Efficiency of Labour: Investment in human capital through education, health, training, etc. increases the efficiency of labour. This, in turn, helps in achieving the path of economic development.
  - (ii) Enlarged Size of Business: The size of business can be enlarged by efficient entrepreneurs and innovators. An entrepreneur becomes efficient by investment in human capital and this efficiency ultimately leads to economic development.
  - (iii) Increase in Production: Increase in the total output produced by a country leads to economic development. Human capital formation produces able and efficient persons who use their knowledge, skills and efficiency to increase the production.

(iv) Change in Social Outlook: Spread of education and health facilities enhances social outlook and develops understanding to accept the changes taking place in society. These positive changes also contribute significantly towards economic development.

(v) Reduced Production Cost: Reduction in the production cost is essential for the economic development. Human capital formation helps to decrease the production cost.

2. Answer: Two independent reports on the Indian economy have identified that India would grow faster due to its strength in human capital formation.

(i) According to a report – ‘Global Growth Centres’- published by Deutsche Bank, India will emerge as one among four major growth centres in the world by the year 2020.

The report supports the view that increase in human capital is crucial to achieving increases in GDP and hence, it states that between 2005 and 2020 we expect a 40 per cent rise in the average years of education in India.

(ii) World Bank’s report, ‘India and the Knowledge Economy Leveraging Strengths and Opportunities’, states that India should make a transition to the knowledge economy.

According to the report, Indian economy has all the key ingredients required for making this transition such as, a critical mass of skilled workers, a well-functioning democracy and a diversified science and technology infrastructure. Moreover, it is expected that the per capita income of India will increase from approximately US \$ 1000 in 2002 to US \$ 3000 in 2020 if it uses its knowledge as much as Ireland does.

3. Answer: The objectives and functions of different organisations are as below:

(i) National Council of Educational Research and Training (NCERT): NCERT is an autonomous organization set up in 1961 by the Government of India to assist and advise the Central and State Governments on policies and programmes for qualitative improvement in school education.

(ii) University Grants Commission (UGC): The UGC, set up in 1953, has the unique distinction of ‘ being the only grant-giving agency in the country, which has been vested with two responsibilities:

providing funds and coordinating, determining and maintaining standards in institutions of higher education.

(iii) All India Council for Technical Education (AICTE): AICTE was set-up in November 1945 as a national level apex advisory body to conduct survey on the facilities on technical education and to promote development in the country in a coordinated and integrated manner.

(iv) Indian Council of Medical Research (ICMR): The Indian Research Fund Association (IRFA), re-designated as ICMR in 1949 in New Delhi, is the apex body in India for the formulation, coordination and promotion of biomedical research. It is

one of the oldest medical research bodies in the world.

4. Answer: The following are the measures should be adopted to reduce the problems of human capital formation in India:

(i) More Emphasis on Technical Education: Technical education makes a person income earner soon. On the other hand, college or university education is increasing the number of unemployed; Therefore, more emphasis should be given on technical education to reduce the problem of human capital formation.

(ii) Need for Government-run Programmes in Education and Health Sector: For the removal of different problems of human capital formation, there is a need for the different forms of government intervention in the education and health sector. In this regard, government has started many programmes in education sector such as Sarva Shiksha Abhiyan (SSA), MidMeal Scheme, Kasturba Gandhi Balika Vidyalaya (KGBV), Prarambhik Shiksha Kosh (PSK), etc. The main objective of these programmes is to make universal access to all. In the health sector government has also started many disease control programmes.

(iii) Regulation of Fees Structure in Education and Health Care Institutions: it is very essential for the government to regulate the fees structure in education and health care institutions, because the fee structures are very low in these institutions and the expenditure is very high, which is regarded as unproductive for the country.

As a result, government sector is making great losses, Government's income is falling short of its expenditure. For the development purpose to remove the problems of human capital, it is very essential to regulate the fees structure in these sectors. The fees structure of private sector in education and health care institutions is manifold more than the government sector. Therefore, it is necessary to regulate the fees structure in the government's education and health institutions.

(iv) Change in Educational System: For the success of human capital formation, basic changes and improvements in educational system are essential. Technical and secondary education should be compulsory and higher education should be provided to the able persons.

(v) Compulsory Secondary Education: For the success of human capital formation, secondary education should be compulsory to all, which will definitely help in increasing the productivity and efficiency

(vi) Proper Motivation. For the success of human capital formation programmes, proper motivation, is required. This will help the people to adopt modern techniques of production To conclude, for the development of any country, human capital formation is very important. Government of India is also investing a lot in the field of education and health for human capital formation.

5. Answer: Following are the sources of human capital:

(i) Education: Investment in education is considered as one of the source of human capital. Without education, human beings have only brutal manpower, in the form

of physical labour. Investment in education gives human beings additional skills to do the same job.

It converts human beings into human capital, which enhances the labour productivity. This investment in education will ultimately increase the income of human beings in future.

(ii) Health: Health is another significant source of human capital. The health of a person affects human capital. A sick person, without access to medical facilities, is compelled to abstain from work and there is a loss of productivity. Expenditure on health directly increases the supply of healthy labour force and hence, a source of human capital formation. The various forms of health expenditure are:

- Preventive medicine such as vaccination
- Curative medicine such as interventions during illness
- Social medicine such as spread of health literacy
- Provision of clean drinking water
- Good sanitation

(iii) On-the-job Training: Firms incur expenditure on providing on-the-job training to their workers. Training imparts technical skills and know-how among the workers while working at the actual work site. On-the-job training helps in enhancing the productivity of the workers and facilitates better utilisation of raw materials. It enables workers to absorb values and standards of an organisation. The workers may be trained by either of the following two methods:

- Training within the firm under the supervision of a skilled worker
- Off-campus training

(iv) Migration: People migrate in search of jobs that fetch them higher salaries than what they may get in their native places. For instance, engineers and doctors migrate to other countries for higher salaries that they may get in such countries.

Migration involves transportation cost, higher cost of living in the migrated place and psychic cost of living in an unknown socio-culture set-up. However, the increased earnings at the new place outweigh the cost of migration. Hence, expenditure on migration is also a source of human capital formation.

(v) Labour Market Information: People need to incur expenditure in order to acquire information related to equity markets, labour markets, education, health and other related markets. For instance, expenditure is incurred while collecting information related to education such form fees, transportation cost, consultancy fee, etc.

Information plays an important role in making decisions regarding investments in human capital. Moreover, expense is incurred for efficient utilisation of the acquired stock of human capital. The money spent on obtaining information related to any kind of markets is a source of human capital formation.

### Case Study Answer-

1. Answer:

1. c) Bihar
2. c) In 2001
3. c) 8%
4. d) Internet.
5. d) All of the above.

2. Answer:

1. c) A and C only
2. d) Buelanan
3. b) Ensure reduction of adverse balance of payments
4. a) C and D only
5. d) Education

### Assertion Reason Answer-

1. c) Both (A) and (R) are True and (R) is the correct of A
2. d) Both (A) and (R) are True but (R) is not the correct explanation of (A)