6.1 Introduction

India has recognized the revolutionary opportunities of Information Communication Technologies (ICT) in tackling the challenges of development such as in the empowerment of communities, dissemination of skills, knowledge, and capabilities required for economic and social advancement. At the international level, India is a signatory to ‘The Millennium Declaration of the United Nations’ which commits the world body to a common roadmap for combating poverty; promoting security, health, prosperity and empowerment for all, especially the poorest and most marginalized groups. India’s policy on ICT has three distinct commitments:

- Creation of a supportive and empowering policy regime and environment, encompassing aspects like the promotion of ICT access, open and competitive telecom policies, and promoting the growth of a vibrant ICT industry;
Building strong public-private partnerships for harnessing and leveraging the energies of the private sector for public goals; and

Specifically deploying ICT in seminal areas like education, health care and governance.

This unit presents some of the historical developments and application of ICT in the country and matches ICT with the challenges facing the education sector. Simultaneously the unit presents a critique of the socio-economic context of India. The unit has also presented the ICT Policy of the Government of Tripura.

6.2 OBJECTIVES

After going through this unit, you should be able to:

- appreciate the contribution of ancient India to Modern Indian education;
- appreciate the need for incorporating ICT in India’s education scenario;
- support and promote students learning through appropriate ICT tools;
- understand the objective behind the establishment of ICT supported Media Production Centers; and
- understand the objectives of ICT policy in Tripura.

6.3 INDIA’S EMERGING SCENARIO

The official name ‘India’ is derived from Sindhu that is the historic local appellation for the river Indus. The Indian constitution also recognizes ‘Bharat’ as the other official name with equal status. The name ‘Bharat’ comes from the name of an ancient Hindu king who was a seeker of knowledge. The third name is Hindustan, meaning land of the Hindus (ICT should be noted here that Hindu refers to those who dwell to the right of the Indus/Sindhu river) and the name was used from the Mughal times onwards. The history of India dates back to 3,200 BC when Hinduism was first founded. Buddhism, Jainism, Sikhism, Judaism, Zoroastrianism, Christianity and Islam all exist within the country today. Given the large size of the country its history has never been the same for two adjoining territories, while its great natural wealth has lured a succession of foreign influences to ICT, each having left their imprint in the country.

India has a long tradition of interest and achievement in science. The major educational endeavours by ancient India includes:

- The first university of the world was established in Takshila (a town in north India) in 700 BC, which attracted students from all parts of the world, with nearly 10,500 studying more than 60 subjects.
- Another university in the town of Nalanda (in modern day Bihar) was built in the 4th Century BC.
- ICT is important to mention that Aryabhatta, an Indian, invented ‘ZERO’ and the Number System were also invented in India.
- Bhaskaracharya calculated the time taken by the earth to orbit the sun in the 5th Century.
- Budhayana first calculated the value of pi, and he explained the concept of what is known as the Pythagorean theorem in the 6th Century.
Technology and Environmental Education

- Algebra, Trigonometry and Calculus came from India.
- The Place Value System, the Decimal System too were developed in India in 100 BC while Sridharacharya gave quadratic equations in the 11th Century.

Check Your Progress

Notes: a) Write your answers in the space given below.
   b) Compare your answers with these great at the end of the Unit.

1) Mention the three distinct commitments of India’s ICT policy.

2) The History of India dates back to 1947 when India attained its Independence from the British colonialism. TRUE or FALSE.

3) Mention any 3 major contributions of ancient India to modern education system.

6.4 SOCIO-ECONOMIC CONTEXT OF INDIA

India is the seventh largest country in the world with an area of 32,872,631 Sq.Km. The mainland measures 3214 km from north to south between extreme latitudes and about 2933 km from east to west between extreme longitudes. The population of India crossed one billion at the turn of the 21st Century. India has the world’s second-largest population after China and ICT is estimated that 16 percent of the world’s population lives in India. Although the country occupies only 2.4% of the world’s land area, ICT supports over 15% of the world’s population. The country has an average population density of 320 per sq. km (in 1996), though ICT reaches 6,888 per sq. km in the larger cities. Almost 40% of Indians are younger than 15 years of age. About 70% of the people live in more than 550,000 villages, and the remainder in more than 200 towns and cities. Religion, caste, and language are major determinants of social and political organization in India today.

The government has recognized 18 languages as official; Hindi is the most widely spoken. According to a recent census, the country has 1,652 dialects. The major
languages with rich literary heritage include the Assamese, Bengali, English, Gujarati, Hindi, Kannada, Kashmiri, Malayalam, Marathi, Oriya, Punjabi, Sanskrit, Sindhi, Tamil, Telugu and Urdu.

India is a land of incredible diversity (culture and physical diversity). The sixteen official languages of India, the five major religions, and the caste system create somewhat diverse conditions for the nation.

India's literacy rate is 64%, but for females ICT is just a little over 40%. The government's commitments to The National Literacy Mission's drives have been highly successful, but there are still 400 million people who are functionally illiterate in India. There are more than 190 million children enrolled in the 23 million elementary schools, and a further 5.3 million school dropouts attend the 240,000 non-formal education centers. However, there are still 70 million children who miss out on their schooling. Most of those living in the rural and tribal areas are landless laborers, and in some states, migrant laborers or nomads. Rural development is a high national priority and central and state governments and non-governmental organizations (NGOs) are supporting various schemes that integrate education, training for employment or self-employment, health and family welfare, agriculture and allied activities, and women and child development.

One of the first extensive experiments was named Satellite Instructional Television Experiment (SITE) conducted on groups distributed over an area larger than the size and population of many countries. After SITE, similar and larger experiments have been undertaken. India has witnessed an unprecedented growth of ICT that is the largest network of radio and television network in the world. A number of media production centers such as Educational Media Research Centres (EMRC) and Electronic Media Production Centres (EMPC) have been established to produce educational audio and video software for various disciplines in various languages.

Check Your Progress

Notes:  a) Write your answers in the space given below.
         b) Compare your answers with these given at the end of the Unit.

4) What is the percentage of Indian living in villages in relation to that of the rest of India?
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5) Mention the female literacy rate of India (by 2000 figures).
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6.5 ICT AND EDUCATION

6.5.1 National Mission for Technology Education

This team of ICT experts has been entrusted with the responsibility of suggesting measures to bridge the gap between demand and supply of ICT teachers and scientists. The mission will also review the existing policy and suggest measures to accelerate the pace of setting a world class infrastructure with an extensive spread of fiber optic networks, satellite-based communication networks, and wireless networks seamlessly interacting with the local informatics infrastructure (LII), national informatics infrastructure (NII) and the global informatics infrastructure (GII) to ensure the fast nation-wide onset of internet, and intranet. The mission will suggest measures to accelerate the rate of personal computer (PC) penetration in the country from the 1998 level of one per 500 to one per 50 people along with a universal access to internet by the year 2008. The existing 934726 public telephones / public call offices (PCOs) will be transformed into public Tele-Info-Centres offering a variety of multimedia information services. Towards the goal of ICT for all by 2008, policies are provided for setting the base for a rapid spread of ICT awareness among the people, propagation of ICT literacy, ICT-led economic development, rural penetration of ICT applications, training people in the use of day-to-day ICT services like tele-banking, tele-medicine, tele-education, tele-document transfer, tele-library, Tele-Info-Centres, public call centers, and training of ICT professionals.

Empowering and providing productive skills and capabilities to the youth is a major challenge facing Indian planners given that globalized environment demands better educated and skilled labour. In India the overall levels of literacy, education and skill-acquisition has remained relatively low despite concerted efforts. ICT is estimated that of the a hundred million children who do not schools worldwide, India alone is estimated to have 40 million. The challenge to universal education remains formidable as can be seen in:

- the absence of school buildings and teachers
- resource constraints
- cultural barriers to formal education
- poor community involvement and inadequacy of teaching tools

The Government of India, through an amendment of the Indian Constitution has obligated the States to provide free and compulsory primary education for children between the ages of six and fourteen. Some of the major initiatives undertaken by the Government include:

- Increasing the amount of resources flowing into the school-education through a special educational tax.
- Emphasis on of innovations and experiments for utilizing tools and technologies to overcome educational challenges
- India has launched its own educational satellite (Edusat) for linking schools across the country on a remote learning platform, in order to mitigate the issue of absence of qualified teachers, as well as the lack of access to schools.
- ICT@ Schools programme and the Vidya Vahini project has also been launched to train children in frontline technologies, and to improve the spread of teaching.
India has been collaborating with other countries in the area of ICT-enabled learning.

Collaboration exists between private and civil society for undertaking experimental projects in ICT for education i.e. the “Hole-in-the-Wall” project that deals mostly with slum-children who are provided free access to computers and the Internet in an interesting, and highly successful experiment in self-directed learning; and the Premji Foundation’s work in using computers as an inducement to retain children, particularly girls, in schools.

Telecommunication has played a key role in many crucial developments like expansion of television, weather forecasting, distance communication etc. ICT is noteworthy that the agency overlooking space research named Indian Space Research Organisation (ISRO) has an integral wing named Development and educational Communication Unit (DECU) examining the role of telecommunication in education and implementing the findings wherever possible. DECU pioneered in the use of teleconferencing technology. ICT experimented with the use of one-way video and two way audio teleconferencing towards the early years of satellite communication.

6.5.2 Demand for ICT Professionals

The NASSCOM - Mckinsey report has projected export of software, software services and ICT enabled services of $50 billion and domestic consumption of $37 billion by 2008. To achieve this target the country would require an estimated human power of about 2.2 million including 1.1 million high level professionals at the level of B.E, B.Tech, MCA or above and the remaining 1.1 million at the lower level coming mainly from Science and Humanities streams of universities with appropriate training in ICT. Besides the existing workforce, there is an additional requirement of 760,000 high level ICT personnel to be prepared by ICT education institutions. To accomplish this objective India is spending a major share of its annual budget on developing the basic telecommunications services and infrastructure in the country. Satellite instructional television experiment (SITE), computer literacy and studies in schools (CLASS), and the provision of computers in schools, training of teachers so that each school in the country is equipped with the required trained personnel are some of the priority areas of India’s ICT project. The trained teachers will in turn teach information technology to children. The ICT task force has also recommended that ICT course module should be made compulsory component of degree courses within a short period. However, not much progress has been made either by the central or state governments in this regard. Nevertheless efforts are going on in some states to introduce ICT courses at the university level.

Recognizing ICT to be a frontier area of knowledge, and also a critical enabling tool for assimilating and processing all other spheres of knowledge, the government has launched operation knowledge. The aim of this national campaign is to universalize computer literacy and also to spread the use of computers and ICT in education. Under this scheme computers and Internet shall be made available in every school, polytechnic, college, university and public hospital in the country before the year 2003. All the universities, engineering colleges, medical colleges and other institutions of higher learning in the country as well as the Research & Development organizations shall be networked for a supplementary programme of distance education for improving the quality of education. At the same time the national level technical institutions (IITs and IISc) is being encouraged to triple their output of students in ICT by suitably restructuring the programmes. The government has also proposed that a National Council of ICT Education comprising of experts from both the industry and the academia be set up for defining courses and their content in the light of developments taking
Check Your Progress 3

Notes: a) Write your answers in the space given below.
   b) Compare your answers with these great at the end of the Unit.

6) Mention the basic telephone services in India (Mention three).

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7) The fully flagged channel that broadcasts education in India is called?

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8) Mention some of the reasons for the establishment of National Mission For Technology Education (Mention any three).

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6.6 ICT POLICY IN TRIPURA

The government of Tripura has laid three broad objectives in its ICT policy that was enacted in 2000. The salient features of the policy are:

6.6.1 The Development of Human Resource

The state government is building competencies in human resource development to correct the existing low levels of ICT education in Tripura, especially in areas outside Agartala. A top priority is placed on the development of ICT educational facilities in district HQs and sub-divisional towns by providing: Computer and Internet access to all higher secondary and High Schools of the state.

i) A module on ICT as an integral component to all degree courses of Tripura University and other institutions.

ii) The curriculum of existing computer courses would also be re-structured to suit the present day requirements of ICT employers.

iii) Encompassing Tripura University, Tripura Engineering College and Tripura Polytechnic on the ERNET (education network) or RENIC (Research and Educational NIC network) so as to facilitate better communication between the educational institutions within Tripura and outside.
iv) Encouragement to ICT training institutions being set up privately in the State, with special emphasis on the district HQs and sub-divisional towns. Efforts will also be made to put into place a mechanism for these training institutions to check sub-standard institutes from proliferating.

v) Special ICT Courses (with provision for stipends) will be started for backward classes of citizens.

vi) The State Government would identify institutes of excellence as partner institutions and involve them in increasing use of ICT in educational institutions.

vii) As envisaged in National ICT Action Plan, suitable floor space in government buildings, schools and colleges, which are not utilized during non-office hours, would be given to private ICT training institutions in return for a proportionate number of nominations of government employees.

viii) Private parties shall be encouraged to set up Internet cafes in colleges and University. Space may be provided free by the institution but computer hardware and software would have to be installed by the party concerned.

ix) Educated youth will be encouraged to set up Public Tele-Information Centres (PTICs) on the lines of PCOs and they may be provided assistance under existing Self- employment schemes, like PMRY. These PTICs will provide Internet access on payment to any person. As envisaged in National ICT Action Plan, the Government of India proposes to launch three schemes of Vidyarthi computer scheme, Shikshak computer scheme and School computer scheme to enable students, teachers and schools respectively to purchase computers under attractive financial packages. The State government will adopt this scheme and encourage its wide implementation.

tax) Promotion of electronic governance for:
- Efficient and effective delivery of government services
- Improved revenue collections
- Improving financial management
- better dissemination of information on government functions, and setting up of IFCs and hosting of websites.

xi) Positioning the state as an attractive location for investment by global and national companies through attractive packages. This will be with an objective to create employment potential in the state in ICT industries. ICT would be the objective of the government to limit its role in the development of ICT industry as a facilitator - providing infrastructural support, interfacing with related institutions within India and outside and providing necessary incentives / concessions to encourage private initiative in the ICT sector.

6.6.2 Electronic Governance

In the first phase of computerization in Tripura, the effort was to computerize the basic clerical operations, like typing and reporting in various formats. The main objective was to create ICT awareness among the officers and employees and also to encourage use of computers in day-to-day use. In order to further consolidate this progress, the following policy initiatives is being taken:
Major departments shall prepare a 5-year ICT plan identifying the computerisation needs of the department and outlining various plans for computerisation. They will also identify as to which all sectors they will computerise and the agency they propose to use for meeting their computerisation needs.

All departments will earmark a portion of their budget for applying ICT in the department. This investment will include not only the purchase of ICT products, ICT software but also for training and ICT services.

Information and Facilitation centres (IFCs) may be set up for better dissemination of information on governmental functions. The departments may also launch their own Web sites for the same purpose.

The State government will develop a WAN (wide area network) for the state and all districts will be linked to the State capital through this WAN. Adequate bandwidth will be provided for the WAN so that the same communication medium can be used for tele- and video-conferencing also. The Government will also put all important Acts, government orders, circulars on the WAN.

The State government will endeavour to expeditiously implement the following major ICT projects in the various departments of Government of Tripura:

- Computerisation of Treasuries
- Computerisation of Sales Tax system
- Computerisation of Motor Vehicles Registration
- Land Record and revenue maps Computerisation
- Geographical Information System (GIS) for the state
- Computerisation of State Group Insurance Scheme
- Computerisation of Pension accounting systems
- Computerisation of Crime Records
- Computerisation of all registration (of deeds) offices.

All departments will have a Personnel Information system developed for them and the payrolls computerised. The State government would also make efforts to start computerized disbursement of salaries. For this, the NIC would be requested to prepare a standard package for use of all departments. Special training packages will be designed with a view to attain universal computer literacy among the officers and staff of Government of Tripura. These training courses may range from courses on basic computer use to ones on proficiency in use of computer for office applications.

6.6.3 Incentives for ICT Industries

The Government of Tripura has already a package of incentives to set up any industry in Tripura. In addition to these incentives, the following incentives are proposed to be given to encourage young entrepreneurs to set up industry, especially for software development, in Tripura:

- The Government of Tripura will give the same status to the sector of ICT-enabled services as is given to the sector of software development.
ii) ICT software industry will be exempted from locational regulations.

iii) The ICT Software industry will be exempt from the provisions of certain acts/regulations, like Pollution Control Act, Factories Act and Contract Labour (Regulation) Act to facilitate easy setting up of software units.

iv) Department of Industries & Commerce shall create a separate area for setting up the units for major ICT companies. This area shall be designated as an ICT Park. The State Govt. would provide basic infrastructural facilities at the Designated ICT Park, including uninterrupted power supply. In case the unit wants to set up its own captive power generation, no permission would be required from any agency for DG sets up to 50 KVA. The land may be allotted in these areas at concessional rates for ICT units, subject to their giving employment to a minimum of 20 persons from the State.

v) The State government will also set up a Software technology Park in Agartala with the help of STPI, a registered society under Department of Electronics (Ministry of Information Technology, Government of India). In this park, provisions will be made for single-window clearance for software development units to be set up, as per the existing schemes of Government of India. The State government will administer the Software Technology Park through a designated agency/corporation.

Check Your Progress

Notes: a) Write your answers in the space given below.
    b) Compare your answers with these great at the end of the Unit.

9) ICT policy in Tripura has three broad objectives. Mention them below.

10) Mention any two priorities of Tripura’s ICT Policy on education.

11) What are any three broad incentives given by the government of Tripura for ICT industries?
6.7 BROADCAST TECHNOLOGY

6.7.1 Radio Broadcast

Radio, commonly known as All India Radio (AIR) or Akashwani, (Akash space, wani voice) has a comparatively long history in India. Broadcast of sound was the first to be experimented with. Started in 1920’s in two metropolitan cities with the initiative of private radio clubs in the country, radio has come of age and is one of the biggest networks in the world. The first station, known as Indian Broadcasting Company Ltd., was formally inaugurated by the then Viceroy of India, Lord Irwin on January 23, 1927 at Mumbai. This was the beginning of formal broadcasting in India. Interestingly, the British Broadcasting Corporation (BBC) was also started the same year. In 1936 the organization was renamed as the All India Radio (AIR) and ICT started functioning as a government organization, with the objectives to inform, educate and entertain its listeners.

The government of India has commissioned a separate radio frequency for broadcasting educational programmes at the national and local levels. The channel has been named GyanVani (Gyan knowledge and Vani voice). IGNOU has been assigned the responsibility to coordinate with educational institutions in the country with regards to production, collection and broadcast of the programmes for a variety of users. The low cost and wider accessibility of radio make ICT a widely used medium in the education sector in India. The FM channel has gone commercial and the Government has already approved more than ten privately owned radio channels that would soon be broadcasting for Indian audiences.

6.7.2 Television Broadcast

Television broadcasting too is a post independence phenomenon in India. Television India (TVI), known as Doordarshan, (door far and darshan view) is one of the largest broadcasting organizations in the world in terms of the infrastructure of studios and transmitters. Television broadcasting started in India in a modest way on September 15, 1959, with a low power transmitter and 21 community television sets installed in select villages in and around Delhi. ICT started regular broadcasting in 1965 in Delhi. The service was extended to the second city - Mumbai in 1972. Television broadcast increased rapidly during 1982, the year India hosted the Asian Games. Television programmes are being watched by approximately 362 million viewers in their homes. Various experiments, such as Secondary School Television Project (1961), Delhi Agriculture Television Project (1966), Satellite Instructional Television Experiment (1975-76) and the Higher Education Television Project (1984) were conducted in the country to assess the potential of television in the Indian context.

Over a period of time and by entry of the private broadcasters, revenue generation became a major consideration for broadcasters, including the Government of India. Today there are more than fifty TV channels available in the country reaching out to over 35 million households. The broadcasters and cable TV operators are competing with each other in attracting more and more viewers and thus generating more revenues. The educational channel (Gyan Darshan) has to compete with national and international commercial channels. The good omen is that most private cable and satellite channels operating in India have some educational programmes. There are also full time educational channels providing education and training.
6.8 TELECOMMUNICATION AND NETWORKS

6.8.1 Satellite Communication

The satellite communication programme started in India in a modest way in 1967. In 1975, India took a decision to add satellite component to its communication networks. Based on this decision, a detailed exercise was carried out to indigenously develop Indian national satellites (INSAT). Various experiments were undertaken by Indian Space Research Organization (ISRO) to determine the concept and feasibility, techno-economic and cost benefits, identification of service needs, earmarking resources and have first hand experience in manufacturing and utilizing satellite system for the requirement of the country. As early as 1982 India launched its first satellite- INSAT-1A (Indian National Satellite) which did not last more that a few weeks but the very next year in 1983 India launched its next satellite INSAT-1B. A large number of satellites have been designed and launched in various orbits which are being used for various purposes, such as telecommunication, remote sensing, data transmission security, etc. The primary aim of the Indian space programme is to promote national development, accelerate economic growth and usher educational and social development.

6.8.2 Telephony

Telecommunication through telephone started in India more than a century ago in 1875. The telephone system arrived in India in 1881 with the installation of the exchanges simultaneously in Chennai, Kolkata, Mumbai and Rangoon (in Myanmar). The first automatic telephone exchange with a capacity of 700 lines and 400 working connections was established at Shimla (Himachal Pradesh, northern part of the country) in 1913. The Indian Telephone Industry (ITI) was set up at Bangalore in 1948 to manufacture telephone sets.

To further boost telecommunication services in the country, wireless in local loop (WLL) technology has been installed across the country. WLL system uses public switched telephone network (PSTN) through radio frequency signals as a substitute for conventional wire for all or part of the connection between the users and the telephone exchange. Thus the remote and scattered rural areas are being connected with the normal communication system in the country. The information revolution in the country has boosted the mobile communication. The facility of mobile telephone has been installed in about 850 cities in the first phase and ICT is expected that its density will increase to 62.02 million by 2010. Mobile phones have fast become a common gadget.

6.8.3 Computer

The exponential growth in computer power during the last 20 years, coupled with reduction in cost, has made computer applications affordable. The computer boom in India was primarily initiated by the 1984 computer policy enunciated by Mr. Rajiv Gandhi, the then Prime Minister on India. This policy augmented computer education and the contemporary liberalization policy pushed the industry into hardware and software production. As a result information industry became a major contributor to the nation’s economy.

6.8.4 Networks

Both types of networks: wireless and wired telecommunication, are in place in India. Internet service started in India on August 15, 1995 and within a period of five years ICT has become a common tool for individuals, particularly students, business people,
industry and government. A number of government and private service providers are competing to capture the market. National Internet Backbone (NIB) is an ambitious project undertaken by Bharat Sanchar Nigam Ltd (BSNL) for building an information superhighway right across the nation to effectively bridge the digital divide. There are a number of LAN and WAN created by various institutions in the country for various educational and information sharing purposes. Following are examples of some networks functioning in the country:

**INET:** The public data network (INET) has been expanded to more than one hundred cities. These cities have been classified into three categories depending upon the business activities and demand. This network service is available from any switched trunk dial (STD) telephone throughout the country. The network provides several user facilities, such as fast select, charging information indication, call redirection, hunt group, network user identification, etc. The facilities enable the network to be used in different applications effectively.

**HVNET:** Department of Telecommunication (DoT) has launched a high-speed satellite network called HVNET which provides high speed data and voice communication capability between computers and data terminals from any point to any point in the country. This eases the problem of remote area communication.

**Intelligent Network (IN)**

Services such as toll-free long distance calls, free phone service, prepaid telephone card, account card calling, tele-voting, universal access number, can be made through IN. For example, this network allows distance education institution to subscribe a common number so that a call made by a student from anywhere in the country or region is routed to a predefined destination. In India IGNOU has toll free telephone facility through which the students can participate in interactive counseling sessions, can ask questions or raise queries related to their study or on the presentations made by the experts.

**ERNET:** The Department of Electronic (DoE) has been running an educational network, called ERNET. This is an education and research network linking about 20,000 users. ICT connects all the five Indian Institutes of Technology (IITs) and Indian Institute of Science, Bangalore and about 350 educational institutions of higher education. The network also facilitates active exchange of information and access to databases. Thus, ICT provides a basic infrastructure for education and research. Efforts are underway to connect all the 8,000 odd colleges in the country so that young scientists and research scholars can have direct access to information.

**DELNET:** Documentation centres from the various data bases/union catalogues in Delhi and outside have created a network called DELNET. There are 74 members of DELNET. Every member library has uploaded its data on its servers, which is connected to DELNET. The member libraries have on-line access to huge database comprising of the entire participating libraries - referred to as union catalogue. Interestingly, DELNET provides a courier service to transfer books/documents from one library to another that has already resulted in reduction of duplication of documents and increase in sharing.

**TEXNET:** Texnet offers the service of on-line advertising bulletin board where buyers and supplies can advertise or browse through data on trading, manufacturing and retail chains of the textile products.
Check Your Progress

Notes: a) Write your answers in the space given below.
   b) Compare your answers with these great at the end of the Unit.

12) Mention the major broadcast technologies common in India.

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13) The radio is more common in India compared to the Television. TRUE or FALSE.

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14) Mention the six networks common in India.

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6.9 LET US SUM UP

ICT has been identified as a resource essential for socio-economic and educational development. ICT is accorded a high priority and is being spearheaded by the Prime Minister of India. The main objective of using ICT in India, like many other countries, is to generate knowledge, data, and documents, and make them available to all its citizens - students, teachers, general public and other functionaries involved in education and development. Indian planners were well aware of the handicaps and as such they had been examining and implementing alternative means and media for education of masses particularly in remote rural areas.

6.10 ANSWERS TO CHECK YOUR PROGRESS

1) The three distinct commitments of India’s ICT policy are:
   - Creation of a supportive and empowering ICT policy regime.
   - Building strong public-private partnerships for harnessing and leveraging the energies of the private sector for public goals.
   - Specifically deploying ICTs in seminal areas like education, health care and governance.
2) The History of India dates back to 1947 when India attained its Independence from the British colonialism. This statement is FALSE.

3) Any 3 major contributions of ancient India to modern education system includes.
   - The first university of the world was established in Takshila
   - Another university in the town of Nalanda
   - ICT is important to mention that Aryabhata, an Indian, invented ‘ZERO’
   - The time taken by the earth to orbit the sun
   - Budhayana first calculated the value of Pi
   - Algebra, Trigonometry and Calculus came from India
   - The Place Value System, the Decimal System

4) 70 Percent

5) About 40 percent

6) Mention the basic telephone services in India (Mention three).

7) The fully flagged channel that broadcasts education in India is called Gyan Vani/Gyan Darshan.

8) Mention some of the reasons for the establishment of National Mission For Technology Education (Mention any Three).
   - review the existing policy and suggest measures to accelerate the pace of setting a world class ICT infrastructure.
   - suggest measures to accelerate the rate of personal computer (PC) penetration in the country.
   - Propose policies for setting the base for a rapid spread of ICT awareness among the people, propagation of ICT literacy, ICT-led economic development, rural penetration of ICT applications. and training people in the use of day to day ICT services.

9) ICT Policy in Tripura has three broad objectives namely:
   - The Development of Human Resource
   - Electronic Governance
   - Incentives for ICT Industries

10) Any two priorities of Tripura’s ICT Policy on education includes:
    - A module on ICT as an integral component to all degree courses.
    - The curriculum of existing computer courses would also be re-structured to suit the present day requirements of ICT employers.
    - Encompassing Tripura University, Tripura Engineering College and Tripura Polytechnic on the ERNET (education network) or RENIC (Research and Educational NIC network) so as to facilitate better communication between the educational institutions within Tripura and outside.
- Encouragement to ICT training institutions being set up privately in the State, with special emphasis on the district HQs and sub-divisional towns. Efforts will also be made to put into place a mechanism for these training institutions to check sub-standard institutes from proliferating.

- Special ICT Courses (with provision for stipends) will be started for backward classes of citizens.

- The State Government would identify institutes of excellence as partner institutions and involve them in increasing use of ICT in educational institutions.

- As envisaged in National ICT Action Plan, suitable floor space in government buildings, schools and colleges, which are not utilized during non-office hours, would be given to private ICT training institutions in return for a proportionate number of nominations of government employees.

- Private parties shall be encouraged to set up Internet cafes in colleges and University. Space may be provided free by the institution but computer hardware and software would have to be installed by the party concerned.

11) Any three broad incentives given by the government of Tripura for ICT industries includes:

- The Government gives the same status as is given to the sector of software development.

- ICT software industry is exempted from location regulations.

- exemption from the provisions of certain acts/regulations aimed at facilitating easy setting up of software units.

- The ICT Parks are provided basic infrastructural facilities like uninterrupted power supply. Moreover, the land may be allotted in these areas at concessional rates for ICT units, subject to their giving employment to a minimum of 20 persons from the State.

- The setting up of a Software technology Park in Agartala with the help of STPI.

12) The major broadcast technologies common in India are

- Radio broadcasting

- Television broadcasting

13) TRUE.

14) The six networks common in India are

- The public data network (INET)

- HVNET

- Intelligent network (IN)

- ERNET

- DELNET

- TEXNET
6.11 SUGGESTED READINGS

