

**CMR INSTITUTE OF TECHNOLOGY**

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**INTERNAL ASSESSMENT TEST - III – DECEMBER - 2020**

Sub:	<b>Management and Entrepreneurship</b>	Sub Code:	<b>18EE51</b>	Branch:	<b>EEE</b>		
Date:	<b>10-12-2020</b>	Duration:	<b>90 min's</b>	Max Marks:	<b>50</b>		
		Sem/Sec:	<b>V- A &amp; B</b>		<b>OBE</b>		
<b>TIME: 12.00 PM TO 1.30 PM</b>							
<b><u>Answer any FIVE FULL Questions</u></b>					<b>MARKS</b>	<b>CO</b>	<b>RB T</b>
1 (a)	Explain various characteristics of small enterprises.	[5]	CO4	L2			
(b)	Describe role of small scale industries in India.	[5]	CO4	L2			
2 (a)	Explain government policy and development of small scale sector in India.	[5]	CO4	L2			
(b)	List out problems for small scale industries in India.	[5]	CO4	L1			
3 (a)	Explain growth and performance of small scale industries in India.	[5]	CO4	L2			
(b)	Outline the impact of globalization on SSI.	[5]	CO4	L4			
4 (a)	Describe two state-level institutions support for business enterprises.	[5]	CO4	L2			
(b)	Explain two central-level institutions support for business enterprises.	[5]	CO4	L2			
5 (a)	Give a brief outline of project objectives and characteristics.	[5]	CO5	L4			
(b)	Explain project life cycle and project scheduling.	[5]	CO5	L2			
6 (a)	Discuss various contents of a project report.	[5]	CO5	L2			
(b)	Explain project identification and its importance.	[5]	CO5	L2			
7 (a)	Describe the various factors to be considered for selecting a project.	[5]	CO5	L2			
(b)	Discuss project analysis.	[5]	CO5	L2			
8 a)	Describe the concepts PERT and CPM.	[5]	CO5	L2			
b)	Explain uses and limitations of PERT and CPM.	[5]	CO5	L2			

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**Answer Key/Solutions**

### INTERNAL ASSESSMENT TEST- 3

Question #	Description	Distribution		Marks
1	<p><b>a)</b> <b>Explain various characteristics of small enterprises.</b></p> <p><b>Characteristics:</b></p> <ul style="list-style-type: none"> <li>• <b>Ownership:</b> SSI's generally are under single ownership. So it can either be a sole proprietorship or sometimes a partnership.</li> <li>• <b>Management:</b> Generally both the management and the control is with the owner/owners. Hence the owner is actively involved in the day-to-day activities of the business.</li> <li>• <b>Labor Intensive:</b> SSI's dependence on technology is pretty limited. Hence they tend to use labour and manpower for their production activities.</li> <li>• <b>Flexibility:</b> SSI's are more adaptable to their changing business environment. So in case of amendments or unexpected developments, they are flexible enough to adapt and carry on, unlike large industries.</li> <li>• <b>Limited Reach:</b> Small scale industries have a restricted zone of operations. Hence, they can meet their local and regional demand.</li> <li>• <b>Resources utilization:</b> They use local and readily available resources which help the economy fully utilize natural resources with minimum wastage.</li> </ul>	5	5	10
	<p><b>b)</b> <b>Describe role of small scale industries in India.</b></p> <ol style="list-style-type: none"> <li><b>1. Small Scale Industries Provides Employment</b> <ul style="list-style-type: none"> <li>• SSI uses labour intensive techniques. Hence, it provides employment opportunities to a large number of people. Thus, it reduces the unemployment problem to a great extent.</li> <li>• SSI provides employment to artisans, technically qualified persons and professionals. It also provides employment opportunities to people engaged in traditional arts in India.</li> </ul> </li> <li><b>2. SSI Facilitates Women Growth</b> <ul style="list-style-type: none"> <li>• It provides employment opportunities to women in India.</li> <li>• It promotes entrepreneurial skills among women as special incentives are given to women entrepreneurs.</li> </ul> </li> <li><b>3. SSI Brings Balanced Regional Development</b> <ul style="list-style-type: none"> <li>• SSI promotes decentralized development of industries as most of the small scale industries are set up in backward and rural areas.</li> <li>• It removes regional disparities by industrializing rural and backward areas and brings balanced regional development.</li> <li>• It promotes urban and rural growth in India.</li> </ul> </li> <li><b>4. SSI Helps in Mobilization of Local Resources</b> <ul style="list-style-type: none"> <li>• It helps to mobilize and utilize local resources like small savings, entrepreneurial talent, etc., of the entrepreneurs, which might otherwise remain idle and unutilized. Thus it helps in effective utilization of resources.</li> </ul> </li> <li><b>5. SSI Paves for Optimisation of Capital</b> <ul style="list-style-type: none"> <li>• SSI requires less capital per unit of output. It provides quick return on investment due to shorter gestation period. The pay back period is quite short in small scale industries.</li> <li>• SSI functions as a stabilizing force by providing high output capital ratio as well as high employment capital ratio.</li> </ul> </li> <li><b>6. SSI Promotes Exports</b> <ul style="list-style-type: none"> <li>• SSI does not require sophisticated machinery. Hence, it is not necessary to import the machines from abroad. On the other hand, there is a great demand for goods produced by small scale sector. Thus it reduces the pressure on the country's <u>balance of payments</u>.</li> <li>• SSI earns valuable foreign exchange through exports from India.</li> </ul> </li> <li><b>7. SSI Complements Large Scale Industries</b> <ul style="list-style-type: none"> <li>• SSI plays a complementary role to large scale sector and supports the large scale industries.</li> <li>• SSI provides parts, components, accessories to large scale industries and meets the requirements of large scale industries through setting up units near the large scale units.</li> </ul> </li> <li><b>8. SSI Meets Consumer Demands</b> <ul style="list-style-type: none"> <li>• SSI produces wide range of products required by consumers in India.</li> </ul> </li> </ol>	5	5	

		<ul style="list-style-type: none"> <li>SSI meets the demand of the consumers without creating a shortage for goods. Hence, it serves as an anti-inflationary force by providing goods of daily use.</li> </ul> <p><b>9. SSI Ensures Social Advantage</b></p> <ul style="list-style-type: none"> <li>SSI helps in the development of the society by reducing concentration of income and wealth in few hands.</li> <li>SSI provides employment to people and pave for independent living.</li> </ul> <p><b>10. Develops Entrepreneurship</b></p> <ul style="list-style-type: none"> <li>It helps to develop a class of entrepreneurs in the society. It helps the job seekers to turn out as job givers.</li> <li>It promotes self-employment and spirit of self-reliance in the society.</li> <li>Development of small scale industries helps to increase the per capita income of India in various ways.</li> </ul>			
2	a)	<p><b>Explain government policy and development of small scale sector in India.</b></p> <p>Some of the Government Policies for development and promotion of Small-Scale Industries in India are: 1. Industrial Policy Resolution (IPR) 1948, 2. Industrial Policy Resolution (IPR) 1956, 3. Industrial Policy Resolution (IPR) 1977, 4. Industrial Policy Resolution (IPR) 1980 and 5. Industrial Policy Resolution (IPR) 1990.</p> <p>Since Independence, India has several Industrial Policies to her credit. So much so that Lawrence A. Veit tempted to say that “if India has as much industry as it has industrial policy, it would be a far well-to-do nation.” With this background in view, in what follows is a review of India’s Industrial Policies for the development and promotion of small-scale enterprises in the country.</p> <p><b>1. Industrial Policy Resolution (IPR) 1948:</b></p> <p>The IPR, 1948 for the first time, accepted the importance of small-scale industries in the overall industrial development of the country. It was well realized that small-scale industries are particularly suited for the utilization of local resources and for creation of employment opportunities.</p> <p>However, they have to face acute problems of raw materials, capital, skilled labour, marketing, etc. since a long period of time. Therefore, emphasis was laid in the IPR, 1948 that these problems of small-scale enterprises should be solved by the Central Government with the cooperation of the State Governments. In nutshell, the main thrust of IPR 1948, as far as small-scale enterprises were concerned, was ‘protection.’</p> <p><b>2. Industrial Policy Resolution (IPR) 1956:</b></p> <p>The main contribution of the IPR 1948 was that it set in the nature and pattern of industrial development in the country. The post-IPR 1948 period was marked by significant developments taken place in the country. For example, planning has proceeded on an organized manner and the First Five Year Plan 1951-56 had been completed. Industries (Development and Regulation) Act, 1951 was also introduced to regulate and control industries in the country.</p> <p>The parliament had also accepted ‘the socialist pattern of society’ as the basic aim of social and economic policy during this period. It was this background that the declaration of a new industrial policy resolution seemed essential. This came in the form of IPR 1956.</p> <p>The IPR 1956 provided that along with continuing policy support to the small sector, it also aimed at to ensure that decentralized sector acquires sufficient vitality to self-supporting and its development is integrated with that of large- scale industry in the country. To mention, some 128 items were reserved for exclusive production in the small-scale sector.</p> <p><b>3. Industrial Policy Resolution (IPR) 1977:</b></p> <p>During the two decades after the IPR 1956, the economy witnessed lopsided industrial development skewed in favour of large and medium sector, on the one hand, and increase in unemployment, on the other. This situation led to a renewed emphasis on industrial policy. This gave emergence to IPR 1977.</p> <p><b>The Policy Statement categorically mentioned:</b></p> <p>“The emphasis on industrial policy so far has been mainly on large industries, neglecting cottage industries completely, relegating small industries to a minor role. The main thrust of the new industrial policy will be on effective promotion of cottage and small-scale industries widely dispersed in rural areas and small towns. It is the policy of the Government that whatever can be produced by small and cottage industries must only be so produced.”</p> <p><b>4. Industrial Policy Resolution (IPR) 1980:</b></p> <p>The Government of India adopted a new Industrial Policy Resolution (IPR) on</p>	05 M	05 M	10 M

	<p>July 23, 1980. The main objective of IPR 1980 was defined as facilitating an increase in industrial production through optimum utilization of installed capacity and expansion of industries.</p> <p><b>As to the small sector, the resolution envisaged:</b></p> <ul style="list-style-type: none"> <li>• Increase in investment ceilings from Rs. 1 lakh to Rs. 2 lakhs in case of tiny units, from Rs. 10 lakhs to Rs. 20 lakhs in case of small-scale units and from Rs. 15 lakhs to Rs. 25 lakhs in case of ancillaries.</li> <li>• Introduction of the concept of nucleus plants to replace the earlier scheme of the District Industry Centres in each industrially backward district to promote the maximum small-scale industries there.</li> <li>• Promotion of village and rural industries to generate economic viability in the villages well compatible with the environment.</li> </ul> <p><b>5. Industrial Policy Resolution (IPR) 1990:</b></p> <p>The IPR 1990 was announced during June 1990. As to the small-scale sector, the resolution continued to give increasing importance to small-scale enterprises to serve the objective of employment generation.</p> <p><b>The important elements included in the resolution to boost the development of small-scale sector were as follows:</b></p> <ul style="list-style-type: none"> <li>• The investment ceiling in plant and machinery for small-scale industries (fixed in 1985) was raised from Rs. 35 lakhs to Rs. 60 lakhs and correspondingly, for ancillary units from Rs. 45 lakhs to Rs. 75 lakhs.</li> <li>• Investment ceiling for tiny units had been increased from Rs. 2 lakhs to Rs. 5 lakhs provided the unit is located in an area having a population of 50,000 as per 1981 Census.</li> <li>• As many as 836 items were reserved for exclusive manufacture in small-scale sector.</li> <li>• A new scheme of Central Investment Subsidy exclusively for small-scale sector in rural and backward areas capable of generating more employment at lower cost of capital had been mooted and implemented.</li> <li>• With a view, to improve the competitiveness of the products manufactured in the small-scale sector; programmes of technology up gradation will be implemented under the umbrella of an apex Technology Development Centre in Small Industries Development Organisation (SIDO).</li> <li>• To ensure both adequate and timely flow of credit facilities for the small-scale industries, a new apex bank known as 'Small Industries Development Bank of India (SIDBI)' was established in 1990.</li> </ul>			
b)	<p><b>List out problems for small scale industries in India.</b></p> <p><b>Problems Faced By Small Scale Industries</b></p> <p>The following are the problems faced by Small Scale Industries:</p> <p><b>1. Poor capacity utilization</b></p> <p>In many of the Small Scale Industries, the capacity utilization is not even 50% of the installed capacity. Nearly half of the machinery remains idle. Capital is unnecessarily locked up and idle machinery also occupies space and needs to be serviced resulting in increased costs.</p> <p><b>2. Incompetent management</b></p> <p>Many Small Scale Industries are run in an incompetent manner by poorly qualified entrepreneurs without much skill or experience. Very little thought has gone into matters such as demand, production level and techniques, financial availability, plant location, future prospects etc. According to one official study, the major reason for SSI sickness is deficiency in project Management i.e., inexperience of promoters in the basic processes of production, cash flow etc</p> <p><b>3. Inadequate Finance</b></p> <p>Many Small Scale Industries face the problem of scarcity of funds. They are not able to access the domestic capital market to raise resources. They are also not able to tap foreign markets by issuing ADR's (American Depository Receipts) GDR's (Global Depository Receipts) etc because of their small capital base. Banks and financial institutions require various procedures and formalities to be completed. Even after a long delay, the funds allocated are inadequate.</p> <p>Bank credit to the small scale sector as a percentage of total credit has been declining. It fell from 16% in 1999 to 12.5% in 2002. Small Scale Industries are not able to get funds immediately for their needs. They have to depend on private money lenders who charge high interest. Finance, as a whole, both long and short term, accounts for as large as 43% of the sector's sickness.</p> <p><b>4. Raw material shortages</b></p>	05M	05 M	

Raw materials are not available at the required quantity and quality. Since demand for raw materials is more than the supply, the prices of raw materials are quite high which pushes up the cost. Scarcity of raw materials results in idle capacity, low production, inability to meet demand and loss of customers.

#### **5. Lack of marketing support**

Small Scale Industries lack market knowledge with regard to competitors, consumer preferences, market trends. Since their production volume is small and cannot meet demand for large quantities their market is very restricted. Now with the process of liberalization and globalization they are facing competition from local industries as well as foreign competitors who sell better quality products at lower prices. For e.g. heavily subsidized but better quality imports from China has made most of the Indian SSI units producing toys, electronic goods, machine tools, chemicals, locks and paper etc., unviable.

#### **6. Problem of working capital**

Many Small Scale Industries face the problem of inadequate working capital. Due to lack of market knowledge their production exceeds demand, and capital gets locked in unsold stock. They do not have enough funds to meet operational expenses and run the business.

#### **7. Problems in Export**

They lack knowledge about the export procedures, demand patterns, product preferences, international currency rates and foreign buyer behavior. Small Scale Industries are not able to penetrate foreign markets because of their poor quality and lack of cost competitiveness. In countries like Taiwan, Japan etc. products produced by Small Scale Industries are exported to many foreign countries. But in India not much thought and focus has gone into improving the export competitiveness of Small Scale Industries.

#### **8. Lack of technology up-gradation**

Many Small Scale Industries still use primitive, outdated technology leading to poor quality and low productivity. They do not have adequate funds, skills or resources to engage in research and development to develop new technologies. Acquiring technology from other firms is costly. Therefore Small Scale Industries are left with no choice but to continue with their old techniques.

#### **9. Multiplicity of labor laws**

One of the merits of Small Scale Industries are that they are labor intensive and can provide employment to a large number of people. But the multiplicity of labor laws, need to maintain several records (PF, ESI, Muster Rolls etc), fines and penalties for minor violations etc place Small Scale Industries at a great disadvantage.

#### **10. Inability to meet environmental standards**

The government lays down strict environmental standards and Courts have ordered closure of polluting industries. Small Scale Industries which are already facing shortage of funds to carry out their business are not able to spend huge sums on erecting chimneys, setting up effluent treatment plants etc.

#### **11. Delayed payments**

Small Scale Industries buy raw materials on cash but due to the intense competition have to sell their products on credit. Buying on cash and selling on credit itself places a great strain on finances. The greater problem is payments are delayed, sometimes even by 6 months to one year. It is not only the private sector but even government departments are equally guilty. Delayed payments severely impact the survival of many Small Scale Industries.

#### **12. Poor industrial relations**

Many Small Scale Industries are not able to match the pay and benefits offered by large enterprises, because their revenues and profitability are low and also uncertain. This leads to labor problems. Employees fight for higher wages and benefits which the SSI is not able to provide. This may lead to strikes, resulting in damage to property in case of violence by employees, production losses etc.

#### **13. Strain on government finances**

Marketing of products manufactured by Small Scale Industries is a problem area. The government has to provide high subsidies to promote sales of products produced by Khadi and Village Industries. This places a great strain on government finances.

#### **14. Concentration of industrial units**

There is high concentration of small scale industrial units in a few states. Of the estimated 3.37 million units as on 2000-01, nearly 60% were located in six states. West Bengal, Madhya Pradesh and Uttar Pradesh alone account for 20% of Small

Scale Industries. Due to concentration, there is high competition among them to procure raw materials and other industrial inputs. This leads to high costs and scarcity of raw materials and other inputs affecting their production and increasing costs.

**a) Explain growth and performance of small scale industries in India.**

**Production**

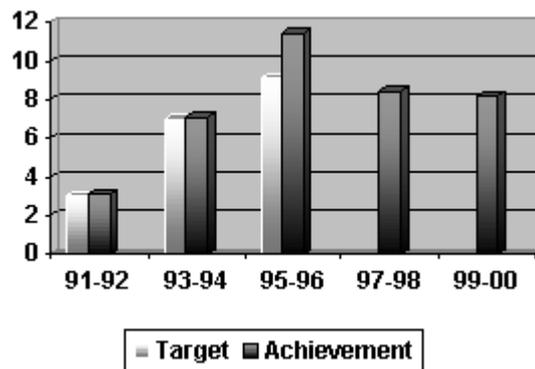
The small-scale industries sector plays a vital role in the growth of the country. It contributes almost 40% of the gross industrial value added in the Indian economy.

It has been estimated that a million Rs. of investment in fixed assets in the small scale sector produces 4.62 million worth of goods or services with an approximate value addition of ten percentage points.

The small-scale sector has grown rapidly over the years. The growth rates during the various plan periods have been very impressive. The number of small-scale units has increased from an estimated 0.87 million units in the year 1980-81 to over 3 million in the year 2000.

When the performance of this sector is viewed against the growth in the manufacturing and the industry sector as a whole, it instills confidence in the resilience of the small-scale sector.

Year	Target	Achievement
1991-92	3.0	3.1
1992-93	5.0	5.6
1993-94	7.0	7.1
1994-95	9.1	10.1
1995-96	9.1	11.4
1996-97	9.1	11.3
1997-98	*	8.43
1998-99	*	7.7
1999-00	*	8.16
2000-01 (P)	*	8.90



3

05 M

05 M

10M

P-Projected (April-December)

\* Target not fixed at constant prices

**Employment**

SSI Sector in India creates largest employment opportunities for the Indian populace, next only to Agriculture. It has been estimated that 100,000 rupees of investment in fixed assets in the small-scale sector generates employment for four persons.

**Generation of Employment - Industry Group-wise**

Food products industry has ranked first in generating employment, providing employment to 0.48 million persons (13.1%). The next two industry groups were Non-metallic mineral products with employment of 0.45 million persons (12.2%) and Metal products with 0.37 million persons (10.2%).

In Chemicals & chemical products, Machinery parts except Electrical parts, Wood products, Basic Metal Industries, Paper products & printing, Hosiery & garments, Repair services and Rubber & plastic products, the contribution ranged from 9% to 5%, the total contribution by these eight industry groups being 49%. In all other industries the contribution was less than 5%.

**Per unit employment**

Per unit employment was the highest (20) in units engaged in beverages, tobacco & tobacco products mainly due to the high employment potential of this industry particularly in Maharashtra, Andhra Pradesh, Rajasthan, Assam and Tamil

Nadu.

Next came Cotton textile products (17), Non-metallic mineral products (14.1), Basic metal industries (13.6) and Electrical machinery and parts (11.2.) The lowest figure of 2.4 was in Repair services line.

Per unit employment was the highest (10) in metropolitan areas and lowest (5) in rural areas.

However, in Chemicals & chemical products, Non-metallic mineral products and Basic metal industries per unit employment was higher in rural areas as compared to metropolitan areas/urban areas.

In urban areas highest employment per unit was in Beverages, tobacco products (31 persons) followed by Cotton textile products (18), Basic metal industries (13) and Non-metallic mineral products (12).

#### Location-wise Employment Distribution - Rural

Non-metallic products contributed 22.7% to employment generated in rural areas. Food Products accounted for 21.1%, Wood Products and Chemicals and chemical products shared between them 17.5%.

#### Urban

As for urban areas, Food Products and Metal Products almost equally shared 22.8% of employment. Machinery parts except electrical, Non-metallic mineral products, and Chemicals & chemical products between them accounted for 26.2% of employment.

In metropolitan areas the leading industries were Metal products, Machinery and parts except electrical and Paper products & printing (total share being 33.6%).

#### State-wise Employment Distribution

Tamil Nadu (14.5%) made the maximum contribution to employment.

This was followed by Maharashtra (9.7%), Uttar Pradesh (9.5%) and West Bengal (8.5%) the total share being 27.7%.

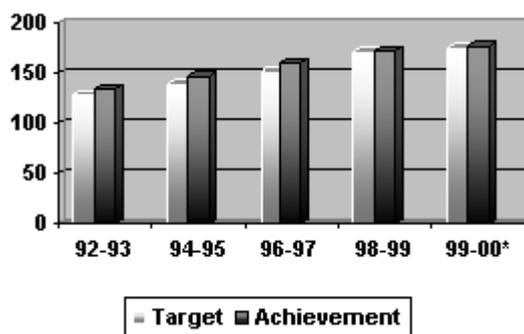
Gujarat (7.6%), Andhra Pradesh (7.5%), Karnataka (6.7%) and Punjab (5.6%) together accounted for another 27.4%.

Per unit employment was high - 17, 16 and 14 respectively - in Nagaland, Sikkim and Dadra & Nagar Haveli.

It was 12 in Maharashtra, Tripura and Delhi.

Madhya Pradesh had the lowest figure of 2. In all other cases it was around the average of 6.

Year	Target (lakh nos.)	Achievement (lakh nos.)	Growth rate
1992-93	128.0	134.06	3.28
1993-94	133.0	139.38	3.28
1994-95	138.6	146.56	5.15
1995-96	144.4	152.61	4.13
1996-97	150.5	160.00	4.88
1997-98	165	167.20	4.50
1998-99	170.1	171.58	2.61
1999-00	175.4	177.3	3.33



P-Provisional

#### Export

SSI Sector plays a major role in India's present export performance. 45%-50% of the Indian Exports is contributed by SSI Sector. Direct exports from the SSI Sector account for nearly 35% of total exports. Besides direct exports, it is estimated that small-scale industrial units contribute around 15% to exports indirectly. This takes place through merchant exporters, trading houses and export houses. They may also be in the form of export orders from large units or the production of parts and components for use for finished exportable goods.

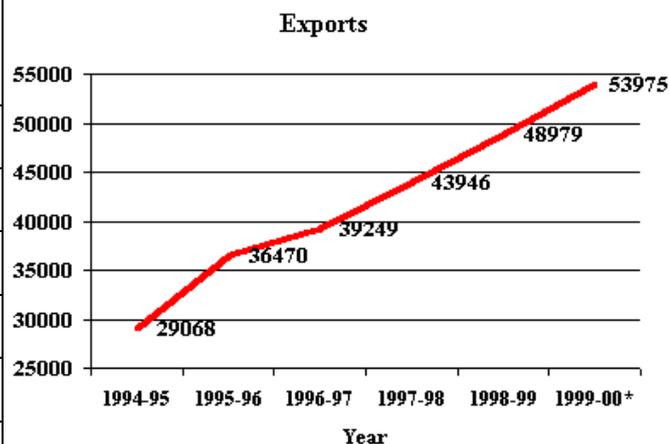
It would surprise many to know that non-traditional products account for more than 95% of the SSI exports.

The exports from SSI sector have been clocking excellent growth rates in this decade. It has been mostly fuelled by the performance of garments, leather and gems and jewellery units from this sector.

The product groups where the SSI sector dominates in exports, are sports goods, readymade garments, woollen garments and knitwear, plastic products, processed food and leather products.

The SSI sector is reorienting its export strategy towards the new trade regime being ushered in by the WTO.

Year	Exports (Rs. Crores) (at current prices)
1994-95	29,068 (14.86)
1995-96	36,470 (25.50)
1996-97	39,249 (7.61)
1997-98	43,946 (11.97)
1998-99	48,979 (10.2)
1999-00 (P)	53,975 (10.2)



P-Provisional

#### Major Export Markets

An evaluation study has been done by M/s A.C. Nielsen on behalf of Ministry of SSI. As per the findings and recommendations of the said study the major export markets identified having potential to enhance SSIs exports are US, EU and Japan. The potential items of SSIs have been categorised into three broad categories. More..

#### Export Destinations

The Export Destinations of SSI products have been identified for 16 product groups. More..

#### Opportunity

The opportunities in the small-scale sector are enormous due to the following factors:

- Less Capital Intensive
- Extensive Promotion & Support by Government
- Reservation for Exclusive Manufacture by small scale sector
- Project Profiles
- Funding - Finance & Subsidies
- Machinery Procurement
- Raw Material Procurement
- Manpower Training
- Technical & Managerial skills
- Tooling & Testing support
- Reservation for Exclusive Purchase by Government
- Export Promotion
- Growth in demand in the domestic market size due to overall economic growth
- Increasing Export Potential for Indian products
- Growth in Requirements for ancillary units due to the increase in number of greenfield units coming up in the large scale sector. Small industry sector has performed exceedingly well and enabled our country to achieve a wide measure of industrial growth and diversification.

By its less capital intensive and high labour absorption nature, SSI sector has made significant contributions to employment generation and also to rural industrialization. This sector is ideally suited to build on the strengths of our traditional skills and knowledge, by infusion of technologies, capital and innovative marketing practices. This is the opportune time to set up projects in the small-scale sector. It may be said that the outlook is positive, indeed promising, given some safeguards. This expectation is based on an essential feature of the Indian industry and the demand

	<p>structures. The diversity in production systems and demand structures will ensure long term co-existence of many layers of demand for consumer products / technologies / processes. There will be flourishing and well grounded markets for the same product/process, differentiated by quality, value added and sophistication. This characteristic of the Indian economy will allow complementary existence for various diverse types of units. The promotional and protective policies of the Govt. have ensured the presence of this sector in an astonishing range of products, particularly in consumer goods. However, the bugbear of the sector has been the inadequacies in capital, technology and marketing.</p>			
<p>b)</p>	<p><b>Outline the impact of globalization on SSI.</b></p> <p><i>"It has been said that arguing against globalization is like arguing against the laws of gravity."</i> - Kofi Annan. This shows the inevitability of globalization. Its spreading like wildfire and it's almost impossible to stop it. No country can isolate itself or shield itself from this phenomenon. Globalization in strict economic sense means unification of economies. Local, national and international economies completely merge with each other. This concept seems very lucrative but has its own cons. A thing in one part of the world can affect other countries' economies too. One can look at it as a choice between which damage we can bear. Isolation as well as globalization both can damage and hinder progress. It's worth to discuss this in light of the fate of the small scale industries which are large in number in India.</p> <p><b>Yes it is detrimental –</b></p> <ol style="list-style-type: none"> <li>1. <i>"The negative side to globalization is that it wipes out entire economies and in doing so wipes out the accompanying culture."</i> - Peter Berger.</li> <li>2. It kills the small scale industries. This is similar to when the British killed the Indian handicrafts and small industries thus hurting the self-sufficient Indian economy.</li> <li>3. It overpowers them by flooding the market with cheaper goods.</li> <li>4. The small scale industries cannot match the technology which the MNC and other corporations use.</li> <li>5. Due to globalization, local assured markets too are falling in hands of the corporations.</li> <li>6. It is only said that globalization provides market access to small industries. This is far from true. In globalization, the strong becomes stronger and the weak weaker, as the strong already has the resources to become stronger.</li> <li>7. It does not increase competition and hence performance of small industries as thought. It actually crushes the small industries thus eliminating competition and creating monopoly.</li> <li>8. Small scale industries are mostly labor intensive thus addressing the issue of unemployment. Globalization brings in technology which is capital intensive and needs less labor. This creates unemployment problems in countries like India where almost 80-90% workforce is in the unorganized sector which is similar to small scale industries. These surely would be adversely affected by globalization.</li> <li>9. Thus globalization would surely finish small scale industries.</li> </ol> <p><b>No, it is beneficial –</b></p> <ol style="list-style-type: none"> <li>1. Globalization provides market access to hitherto small industries. They simply push them from local to global.</li> <li>2. They help in expansion of small industries and give opportunities to them to make it big.</li> <li>3. The fame of a product or process travels around the globe.</li> <li>4. Technological expertise flows into the industry as exposure is gained to worldwide knowledge.</li> <li>5. In countries like India, the government tries to provide safeguards to the small industry. Thus the benefits of globalization would increase as the government tries to shield these industries from negatives of globalization.</li> <li>6. We compare globalization to British imperial policies. However we always forget a crucial point that, globalization is voluntary. Nowhere is it made compulsory and unlike British times it provides opportunities to improve and also provides markets.</li> <li>7. Nowadays there are forums to address issues of unequal treatment when it comes to trade.</li> <li>8. We consider advertising and taking products to all the corners of India as a positive step. This is just extended to all corners of the world in globalization. So it is no different from the national economy.</li> <li>9. We always look at globalization as a phenomenon which adversely affects small industries. We must look at it as an opportunity to make it big, to expand, etc.</li> </ol>	<p>05 M</p>	<p>05 M</p>	

	<p>We must realize that globalization is a huge phenomenon which encompasses many aspects of our life. Even our cultures are showing signs of merging. Globalization is no longer restricted to the economic sphere. Our social sphere too is highly influence by globalization. The entire world is becoming a melting pot. We can look at it negatively or positively. However one must realize that we can utilize globalization to our benefit. With the protection of the government, even the small scale industries can make a mark. Ultimately each business or venture has an aim of profit. For it, it needs to expand. For expansion it needs capital and market penetration. Globalization provides those very things. At the end of the day, it's just a matter of seizing the opportunity which can come in any form.</p>			
4	<p>a) <b>Describe two state-level institutions support for business enterprises.</b></p> <p><b>KIADB</b>  <b>KIADB – As a Premier Industrial Land Provider</b>  Karnataka Industrial Areas Development Board (KIADB) is a statutory body, constituted under sec.5 of Karnataka Industrial Areas Development Act (KIAD Act)-1966 vide order No. Cl 67 GMI 66 dated 20th June 1966 to promote rapid and orderly establishment and development of industries and for providing industrial infrastructural facilities and other amenities in Industrial areas in the State of Karnataka. KIAD Act-1966, a special Act, provides for expeditious acquisition of lands for industrial and infrastructure purposes.  KIADB functions as per statutory provisions, Rules and Regulations enacted under the KIAD Act. The Board comprises of senior Government Officers in their ex-officio capacities. The Board members meet regularly to take decisions and monitor the functions.The vision of KIADB and world class infrastructure has made investors all over the world take notice of Karnataka as the premier destination for their startups and ventures.</p> <p><b>Aims and Objectives:</b></p> <ol style="list-style-type: none"> <li>1. Promote rapid and orderly development of industries in the state.</li> <li>2. Assist in implementation of policies of Government within the purview of KIAD Act.</li> <li>3. Facilitate in establishing infrastructure projects.</li> <li>4. Function on “No Profit – No Loss” basis.</li> </ol> <p><b>Functions:</b></p> <ol style="list-style-type: none"> <li>1. Acquire land and develop industrial areas in the state.</li> <li>2. Provide basic infrastructure in the industrial areas.</li> <li>3. Acquire land for Single Unit Complexes.</li> <li>4. Acquire land for Government agencies for their schemes and infrastructure projects.</li> </ol> <p><b>Facilitator of Industrial Growth</b>  KIADB has so far developed 173 Industrial Areas in 30 districts of the State. A typical industrial area developed by the Board will have following infrastructure facilities:</p> <ul style="list-style-type: none"> <li>• Approach roads and internal roads with storm water drains.</li> <li>• Power supply and street lighting.</li> <li>• Water supply.</li> <li>• CETP/STP.</li> <li>• Technical Training Centres and R&amp;D centres.</li> <li>• Common Facilities Centres to accommodate Banks, Post Offices, Telephone Exchanges, Dispensaries and Canteens, among others.</li> <li>• Power Sub-Station.</li> <li>• Hotels &amp; Hospitals.</li> <li>• Housing tenements to provide housing facility to the labour force working in the industrial units.</li> </ul> <p><b>KSSIDC</b>  <b>Karnataka State Small Industries Development Corporation</b>  Karnataka State Small Industries Development Corporation is the industrial and investment promotion agency of the Government of Karnataka. The growth of Small Scale Industries in our country since independence is rightly regarded as one of the most significant features of planned economic development. The very concept of small-scale industries, as we know, was not in vogue on the eve of independence.</p>	05 M	05 M	10 M

Rural and Cottage industries, which constituted the “indigenous sector” of our industries, were wide spread throughout the length and breadth of our country. Various programmes to sustain, modernise and further develop this group of industries were initiated soon after the independence and the modern small-scale industry scheme has gradually emerged out of this programme. The Small Scale Industries have provided opportunities for self employment to educated young men and experienced technicians from the middle level of society and contributed full to the growth of industrial entrepreneurship in our country. Today small-scale industries is regarded as power tool for balanced regional economic development. These achievements are primarily due to the dynamic enterprising spirit of the small-scale industrialists themselves.

The growth of Small Scale Industries in our country since independence is rightly regarded as one of the most significant features of planned economic development. The very concept of small-scale industries, as we know, was not in vogue on the eve of independence. Rural and Cottage industries, which constituted the “indigenous sector” of our industries, were wide spread throughout the length and breadth of our country. Various programmes to sustain, modernise and further develop this group of industries were initiated soon after the independence and the modern small-scale industry scheme has gradually emerged out of this programme. The Small Scale Industries have provided opportunities for self-employment to educated young men and experienced technicians from the middle level of society and contributed full to the growth of industrial entrepreneurship in our country. Today small-scale industry is regarded as power tool for balanced regional economic development. These achievements are primarily due to the dynamic enterprising spirit of the small-scale industrialists themselves. A positive programme for assistance of small-scale industries was initiated towards the end of 1954 on the basis of a suggestion made by the international planning team sponsored by the Ford Foundation at the request of Govt. of India. Further, on the basis of the recommendations of the central small scale industries advisory board the state level organisations to assist the small scale industries for procurement of scarce raw materials, establishment of industrial estates, etc, have been set up in all states. KSSIDC, is one of such Corporations, established on 29th April 1960. The registered office of the Company started functioning at Bengaluru in the State of Karnataka. The Company framed comprehensive and well-defined Memorandum of Association and Articles of Association. Which permit the Corporation to take up any activity aimed at the rapid development of small-scale industry, subject to the guidelines issued by the Government from time to time and also as per Govt. order as under.

**Advantages in Having Your Unit in KSSIDC Industrial Estate**

KSSIDC functions for all practical purposes like a core corporate body. Estates are marked with a difference from Normal Private Estate.

The advantages to be a part of KSSIDC are:

1. KSSIDC Land is for Industrial Purpose. So no need to waste time for N.A./NOC. SSIDC establishes its estates after verifying the viability and Water, Power, Linkages, Communication, disposal of waste the entrepreneur gets a really developed and planned area.
2. KSSIDC estates are provided with required amenities like Training institute, P&T office, dispensary, police chowky, community garden banks canteen etc.,
3. All titles related to land/building within KSSIDC estates are free from any encumbrances and are easily transferable.
4. An entrepreneur can start the industry by collecting necessary possession certificate and by paying necessary EMD.
5. KSSIDC provides ready to occupy sheds for immediate starting of industries and also provide Gowdown for storage of its materials.
6. KSSIDC being a Government Organisation is, transparent and of the prices of land/building. The prices so fixed are accepted by Financial Institutions for quick approval of loans.
7. KSSIDC estates, provides a unique opportunity to entrepreneur cluster benefits related to Raw material, market technology services, linkages etc.,
8. Any upgradation programme undertaken in KSSIDC estate will be advantage to all industries located therein.
9. KSSIDC provides special services in acquiring and allotting land to SSI entrepreneurs.
10. KSSIDC allots land on top priority basis to start industry by SC/ST/SEDC

	<p>applicants, further to needy SC &amp; ST units of Backward areas will be paid subsidy amount and also reduced payment of EMD / application / scrutiny fee.</p> <ol style="list-style-type: none"> <li>11. KSSIDC divisional offices established in the state will have raw-material depots to distribute raw materials to SSI units.</li> <li>12. KSSIDC estate provides ISI testing units to help SSI units to process quality products.</li> <li>13. KSSIDC collects the installment amount due from shed allottees on annuity method. KSSIDC estates where SSI units established will get easy loans from financial institute and nationalised banks for purchase of machinery and also loans to purchase raw materials.</li> </ol>			
b)	<p><b>Explain two central-level institutions support for business enterprises.</b></p> <p><b>SIDBI</b></p> <p>The best way of improving rural economy is by creating more employment through dispersal of various industrial activities so that there will be development of backward areas and at the same time improvement in the standard of living of the people. The above object could be achieved easily by the promotion of small scale industry as it contributes nearly 40% of the manufacturing sector in the country.</p> <p>In India, small scale industry's contribution during 1998-99 was INR 5,38,357 crores as against INR. 4,65,171 crores in 1997-98. The growth of SSI was 8.43 per cent. It has an employment potentiality of 171.58 lakhs. Hence, it is important to create an apex institution which can provide finance to small scale industries.</p> <p><b>ORIGIN OF SIDBI</b></p> <p>In order to promote small scale industries in the country, a special Act was passed in Parliament in April 1990 for starting of Small Industries Development Bank of India. SIDBI is a wholly owned subsidiary of <u>IDBI</u>. It is providing assistance to all those institutions which are promoting small scale industries.</p> <p><b>CAPITAL OF SIDBI</b></p> <p>SIDBI has an authorized capital of Rs. 1000 crores which can be increased to Rs. 1000 crores. The RBI has also allocated INR 10,000 Crores to SIDBI for various venture capital activities and company startups in 2015. The entire operations of IDBI connected with small scale industries are now handed over to SIDBI.</p> <p><b>OBJECTIVES OF SIDBI</b></p> <ol style="list-style-type: none"> <li>1. To promote marketing of products of small scale sector.</li> <li>2. To upgrade technology and also undertaking modernization of small scale units.</li> <li>3. To provide more financial assistance to small scale ancillary and tiny sector.</li> <li>4. To encourage employment oriented industries.</li> <li>5. To coordinate all the other institutions involved in the promotion of small scale industries.</li> </ol> <p><b>FUNCTIONS OF SIDBI</b></p> <p>Coordinating and financing the various institutions involved in the development of small industries are undertaken by SIDBI.</p> <p>Its functions are</p> <p><b>Refinance to SSI:</b></p> <p>Refinancing loans and advances provided by commercial banks to small scale industrial units. Different types of loans are given to small scale industries and as per the <u>recommendations of Nayak Committee</u>, additional funds have been given to commercial banks for promoting more borrowings of small scale industries. In fact, there are commercial banks with separate branches meant exclusively for small scale industries.</p> <p><b>Discounting the bills of SSIs:</b></p> <p>Apart from discounting the bills of small scale industries, even hurdles arising out of financing small scale industries are being discounted. The bank credit has gone up to Rs. 2,18,219 crores. The percentage of bank credit to SSI has gone up to 17.5.</p> <p><b>SIDBI offers assistance to exports:</b></p> <p>Direct assistance to export oriented units and also to import substituting units in the small scale sector is given the highest priority. There has been a simplified</p>	05 M	05 M	

procedure for the exports of small scale industries. Products of SSI exporters are displayed in international exhibitions with the help of SIDBI. Other export related expenditures are borne by SIDBI. Latest packing standards and training programmes on packing for exports are also financed by SIDBI. Trade delegations and sales and study teams are sponsored for small scale sector under Marketing Development Assistance scheme.

**Seed capital and also soft loan Assistance:**

Seed capital is provided for starting of SSI units. Under this, the initial expenditure in starting the small scale units are being met by SIDBI. In addition to that, SIDBI, under this scheme, undertakes the following activities:

- Identification of potential entrepreneurs in the district.
- Providing training facility for these entrepreneurs.
- Linkage with banks for financial assistance
- Follow-up and monitoring the progress

Under soft loan, SIDBI provides long-term loan repayable in a period of 15 to 20 years with a very low rate of interest.

**Non finance services:**

Under this scheme, SIDBI undertakes with the help of other institutions marketing survey and the potentialities of small scale industries in the particular area. Wherever possible, it helps in the procurement raw materials.

**Factoring, Leasing and HP finance:**

In factoring services, SIDBI finances 80% of the bills to the seller and after obtaining the remaining 20% balance, it repays to the seller and for this service it obtains a factoring commission.

**Leasing:**

After the increase in the fixed capital limit of Rs. 1 crore to SSI, there has been increasing demand for leasing equipment. The small scale industries have expanded their activities as lease finance institutions have enabled them to obtain costly equipment which are otherwise, not possible within the purview of small scale industries, In fact, this has helped them in modernizing their industry.

**HP finance:**

Hire purchase financing has also helped small scale industries in acquiring machinery of a higher value. In fact, certain machinery are even imported from foreign countries on a deferred payment basis.

**Assistance to other financial institutions:**

In every State, State Finance Corporations have been promoted for financing small scale industries. They are under the control of respective state governments. At the national level, a separate corporation is promoted for financing small scale industries called National Small Scale Industries Corporation. This was started in 1995 to promote, aid and ensure faster growth in small scale industries.

**Automatic finance scheme:**

Refinance facilities under automatic finance scheme is also provided which was initially for Rs. 50 lakhs. Now with the increase in the capital limit of small scale industries, this finance scheme has also increased its limit to Rs. 2 crores.

**Modernization:**

The technology development which has taken place in various industries has also spread to small scale industries and to meet the requirements of technology upgradation, a separate fund has been set up by SIDBI, through which it provides Technology upgradation equipment finance.

**Venture capital:**

Venture capital fund for the promotion of new entrepreneurs has been set up. For this purpose, IDBI, the holding company of SIDBI provides funds. New ventures in different areas with high technical know how is encouraged under the scheme. Though this scheme is in the initial stage, this will promote more new small scale industries.

**Single window scheme:**

This scheme was introduced by SIDBI for providing finance to commercial banks which in turn will give all kinds of assistance to small scale industries. That is, from registration units to marketing of products will be undertaken under this scheme.

The creation of SIDBI has certainly improved the growth of small scale industries in the country. Apart from financing, banks have identified the weak areas of small scale industries and have attempted to improve the same. This will go a long way in not only strengthening SSI units but also in the creation of employment opportunities in rural areas.

<p><b>NSIC</b> National Small Industries Corporation (NSIC), is an ISO 9001-2015 certified Government of India Enterprise under Ministry of Micro, Small and Medium Enterprises (MSME). NSIC has been working to promote, aid and foster the growth of micro, small and medium enterprises in the country. NSIC operates through countrywide network of offices and Technical Centres in the Country. In addition, NSIC has set up Training cum Incubation Centre managed by professional manpower.</p> <p><b>Mission:</b> “To promote and support Micro, Small &amp; Medium Enterprises (MSMEs) Sector” by providing integrated support services encompassing Marketing, Technology, Finance and other services.</p> <p><b>Vision:</b> “To be a premier Organization fostering the growth of Micro, Small and Medium Enterprises (MSMEs) Sector”.</p> <p><b>Schemes of NSIC</b> NSIC facilitates Micro, Small and Medium Enterprises with a set of specially tailored scheme to enhance their competitiveness. NSIC provides integrated support services under Marketing, Technology, Finance and other Support service.</p> <p><b>Marketing Support</b> Marketing has been identified as one of the most important tool for business development. It is critical for the growth and survival of MSMEs in today's intensely competitive market. NSIC acts as a facilitator and has devised a number of schemes to support enterprises in their marketing efforts, both domestic and foreign markets. These schemes are briefly described as under :</p> <p><b>Consortia and Tender Marketing</b> Small Enterprises in their individual capacity face problems to procure &amp; execute large orders, which deny them a level playing field vis-a-vis large enterprises. NSIC forms consortia of Micro and Small units manufacturing the same product, thereby pooling in their capacity. NSIC applies the tenders on behalf of single MSE/Consortia of MSEs for securing orders for them. These orders are then distributed amongst MSEs in tune with their production capacity.</p> <p><b>Single point Registration for Government Purchase</b> The units registered under Single Point Registration Scheme of NSIC are eligible to get the benefits under “Public Procurement Policy for Micro &amp; Small Enterprises (MSEs) Order 2012” as notified by the Government of India, Ministry of Micro Small &amp; Medium Enterprises, New Delhi vide Gazette Notification dated 23.03.2012.</p> <ul style="list-style-type: none"> <li>• Issue of the Tender Sets free of cost;</li> <li>• Exemption from payment of Earnest Money Deposit (EMD),</li> <li>• In tender participating MSEs quoting price within price band of L1+15 per cent shall also be allowed to supply a portion upto 20% of requirement by bringing down their price to L1 Price where L1 is non MSEs.</li> <li>• Every Central Ministries/Departments/PSUs shall set an annual goal of minimum 20 per cent of the total annual purchases of the products or services produced or rendered by MSEs. Out of annual requirement of 20% procurement from MSEs, 4% is earmarked for units owned by Schedule Caste /Schedule Tribes (as per PPP Order dated 23.03.2012 overall procurement goal shall be mandatory w.e.f. 01/04/2015)</li> <li>• In addition to the above, 358 items are also reserved for exclusive purchase from SSI Sector</li> </ul> <p><b>MSME Global Mart B2B Web Portal for MSMEs</b> With increase in competition and melting away of international boundaries, the demand for information is reaching new heights. NSIC, realizing the needs of MSMEs, is offering Infomediary Services which is a one-stop, one-window bouquet of aids that will provide information on business &amp; technology and also exhibit the core competence of Indian MSMEs. B2B Webportal is offering following benefits to the members of Infomediary Services.</p> <ul style="list-style-type: none"> <li>• Interactive database of MSMEs</li> <li>• Self web development tool</li> <li>• National Tenders on email</li> <li>• Centralized mail system</li> <li>• Popular Products Section</li> <li>• Unlimited global Trade Leads</li> <li>• Trust Seal of NSIC</li> <li>• MSME Web Store</li> <li>• Multiple Language Support</li> </ul>			
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	<ul style="list-style-type: none"> <li>• Discussion Board</li> <li>• Call Centre Support &amp; Live Chat</li> <li>• Other Value added Services</li> <li>• Payment Gateway for membership subscription</li> </ul> <p><b>Marketing Intelligence</b> Collect and disseminate both domestic as well as international marketing intelligence for the benefit of MSMEs. This cell, in addition to spreading awareness about various programmes / schemes for MSMEs, will specifically maintain database and disseminate information.</p> <p><b>Exhibitions and Technology Fairs</b> To showcase the competencies of Indian SSIs and to capture market opportunities, NSIC participates in select International and National Exhibitions and Trade Fairs every year. NSIC facilitates the participation of the small enterprises by providing concessions in rental etc. Participation in these events exposes SSI units to international practices and enhances their business prowess.</p> <p><b>Buyer-Seller meets</b> Bulk and departmental buyers such as the Railways, Defence, Communication departments and large companies are invited to participate in buyer-seller meets to enrich small enterprises knowledge regarding terms and conditions, quality standards, etc required by the buyer. These programmes are aimed at vendor development from MSMEs for the bulk manufacturers.</p> <p><b>Credit Support</b> NSIC facilitates credit requirements of small enterprises in the following areas:</p> <p><b>Financing for procurement of Raw Material (Short term)</b> NSIC's Raw Material Assistance Scheme aims at helping Small Enterprises by way of financing the purchase of Raw Material (both indigenous &amp; imported). The salient features are:</p> <ol style="list-style-type: none"> <li>1. Financial Assistance for procurement of Raw Materials upto 90 days.</li> <li>2. Bulk purchase of basic raw materials at competitive rates.</li> <li>3. NSIC facilitates import of scarce raw materials.</li> <li>4. NSIC takes care of all the procedures, documentation &amp; issue of letter of credit in case of imports.</li> </ol> <p><b>Finance through syndication with Banks</b> In order to ensure smooth credit flow to small enterprises, NSIC is entering into strategic alliances with commercial banks to facilitate long term / working capital financing of the small enterprises across the country. The arrangement envisages forwarding of loan applications of the interested small enterprises by NSIC to the banks and sharing the processing fee.</p> <p><b>Technology Support</b> Technology is the key to enhancing a company's competitive advantage in today's dynamic information age. Small enterprises need to develop and implement a technology strategy in addition to financial, marketing and operational strategies and adopt the one that helps integrate their operations with their environment, customers and suppliers. NSIC offers small enterprises the following support services through its Technical Services Centres and Extension Centres:</p> <ol style="list-style-type: none"> <li>1. Advise on application of new techniques</li> <li>2. Material testing facilities through accredited laboratories</li> <li>3. Product design including CAD</li> <li>4. Common facility support in machining, EDM, CNC, etc.</li> <li>5. Energy and environment services at selected centres</li> <li>6. Classroom and practical training for skill upgradation</li> </ol>			
5	<p>a) <b>Give a brief outline of project objectives and characteristics.</b> <b>Objectives</b> have a range of characteristics that determine their feasibility and appropriateness. A good objective for a project is always characterized by the following:</p> <ul style="list-style-type: none"> <li>▪ Clear</li> <li>▪ Short</li> <li>▪ Complete</li> <li>▪ Comprehensive</li> <li>▪ Measurable</li> <li>▪ Achievable</li> <li>▪ Reasonable</li> <li>▪ Time-dependent</li> </ul>	05 M	05 M	10 M

	<p><b>These seven characteristics are;</b></p> <ol style="list-style-type: none"> <li><b>1. A single definable purpose, end-item or result.</b> This is usually specified in terms of cost, schedule and performance requirements.</li> <li><b>2. Every project is unique.</b> It requires the doing of something different, something that was not done previously. Even in what are often called “routine” projects such as home construction, the variables such as terrain, access, zoning laws, labour market, public services and local utilities make each project different. A project is a one-time, once-off activity, never to be repeated exactly the same way again.</li> <li><b>3. Projects are temporary activities.</b> A project is an ad hoc organization of staff, material, equipment and facilities that is put together to accomplish a goal. This goal is within a specific time-frame. Once the goal is achieved, the organization created for it is disbanded or sometimes it is reconstituted to begin work on a new goal (project).</li> <li><b>4. Projects cut across organizational lines.</b> Projects always cut across the regular organizational lines and structures within a firm. They do this because the project needs to draw from the skills and the talents of multiple professions and departments within the firm and sometimes even from other organizations. The complexity of advanced technology often leads to additional project difficulties, as they create task interdependencies that may introduce new and unique problems.</li> <li><b>5. Projects involve unfamiliarity.</b> Because a project differs from what was previously done, it also involves unfamiliarity. And oft time a project also encompasses new technology and, for the organization/firm undertaking the project, these bring into play significant elements of uncertainty and risk.</li> <li><b>6. The organization usually has something at stake when undertaking a project.</b> The unique project “activity” may call for special scrutiny or effort because failure would jeopardize the organization/firm or its goals.</li> <li><b>7. A project is the process of working to achieve a goal.</b> During the process, projects pass through several distinct phases, which form and are called the project life cycle. The tasks, people, organizations, and other resources will change as the project moves from one phase to the next. The organizational structure and the resource expenditures build with each succeeding phase; peak; and then decline as the project nears completion.</li> </ol>			
b)	<p><b>Explain project life cycle and project scheduling.</b></p> <p><b>The Project Life Cycle (Phases)</b></p> <p>The project manager and project team have one shared goal: to carry out the work of the project for the purpose of meeting the project’s objectives. Every project has a beginning, a middle period during which activities move the project toward completion, and an ending (either successful or unsuccessful). A standard project typically has the following four major phases (each with its own agenda of tasks and issues): initiation, planning, implementation, and closure. Taken together, these phases represent the path a project takes from the beginning to its end and are generally referred to as the project “life cycle.”</p> <p><b>Initiation Phase</b></p> <p>During the first of these phases, the initiation phase, the project objective or need is identified; this can be a business problem or opportunity. An appropriate response to the need is documented in a business case with recommended solution options. A feasibility study is conducted to investigate whether each option addresses the project objective and a final recommended solution is determined. Issues of feasibility (“can we do the project?”) and justification (“should we do the project?”) are addressed.</p> <p>Once the recommended solution is approved, a project is initiated to deliver the approved solution and a project manager is appointed. The major deliverables and the participating work groups are identified, and the project team begins to take shape. Approval is then sought by the project manager to move onto the detailed planning phase.</p> <p><b>Planning Phase</b></p> <p>The next phase, the planning phase, is where the project solution is further developed in as much detail as possible and the steps necessary to meet the project’s objective are planned. In this step, the team identifies all of the work to be done. The project’s tasks and resource requirements are identified, along with the strategy for producing them. This is also referred to as “scope management.” A project plan is created outlining the activities, tasks, dependencies, and timeframes. The project</p>	05 M	05 M	

manager coordinates the preparation of a project budget by providing cost estimates for the labour, equipment, and materials costs. The budget is used to monitor and control cost expenditures during project implementation.

Once the project team has identified the work, prepared the schedule, and estimated the costs, the three fundamental components of the planning process are complete. This is an excellent time to identify and try to deal with anything that might pose a threat to the successful completion of the project. This is called risk management. In risk management, "high-threat" potential problems are identified along with the action that is to be taken on each high-threat potential problem, either to reduce the probability that the problem will occur or to reduce the impact on the project if it does occur. This is also a good time to identify all project stakeholders and establish a communication plan describing the information needed and the delivery method to be used to keep the stakeholders informed.

Finally, you will want to document a quality plan, providing quality targets, assurance, and control measures, along with an acceptance plan, listing the criteria to be met to gain customer acceptance. At this point, the project would have been planned in detail and is ready to be executed.

#### **Implementation (Execution) Phase**

During the third phase, the implementation phase, the project plan is put into motion and the work of the project is performed. It is important to maintain control and communicate as needed during implementation. Progress is continuously monitored and appropriate adjustments are made and recorded as variances from the original plan. In any project, a project manager spends most of the time in this step. During project implementation, people are carrying out the tasks, and progress information is being reported through regular team meetings. The project manager uses this information to maintain control over the direction of the project by comparing the progress reports with the project plan to measure the performance of the project activities and take corrective action as needed. The first course of action should always be to bring the project back on course (i.e., to return it to the original plan). If that cannot happen, the team should record variations from the original plan and record and publish modifications to the plan. Throughout this step, project sponsors and other key stakeholders should be kept informed of the project's status according to the agreed-on frequency and format of communication. The plan should be updated and published on a regular basis.

Status reports should always emphasize the anticipated end point in terms of cost, schedule, and quality of deliverables. Each project deliverable produced should be reviewed for quality and measured against the acceptance criteria. Once all of the deliverables have been produced and the customer has accepted the final solution, the project is ready for closure.

#### **Closing Phase**

During the final closure, or completion phase, the emphasis is on releasing the final deliverables to the customer, handing over project documentation to the business, terminating supplier contracts, releasing project resources, and communicating the closure of the project to all stakeholders. The last remaining step is to conduct lessons-learned studies to examine what went well and what didn't. Through this type of analysis, the wisdom of experience is transferred back to the project organization, which will help future project teams.

#### **Project Scheduling**

Project Scheduling can be broken down into twelve general steps. These are summarized below, and I will explain them in more detail with an example.

**Step 1.** Identify the activities

**Step 2.** Determine activity relationships (immediate predecessors of each activity)

**Step 3.** Estimate activity completion times and costs

**Step 4.** Construct an activity *network*

**Step 5.** Execute a forward pass to determine *earliest start and earliest finish times* for each activity, and *project completion time*

**Step 6.** Execute a backward pass to determine *latest start and latest finish times* for each activity

**Step 7.** Identify activity *slack* (length of time an activity can be delayed without delaying the project completion time)

**Step 8.** Find the activities with zero slack; these are *critical activities* and make up at least one *critical path*

**Step 9.** Use information from Steps 5 - 8 to develop the activity schedule for the project.

	<p><b>Step 10.</b> Find project completion time variance and conduct <i>probability analysis</i>, such as the probability of meeting a customer target completion time, under the condition of uncertainty in activity times.</p> <p><b>Step 11.</b> Consider <i>time-cost</i> tradeoffs</p> <p><b>Step 10.</b> <i>Implement, monitor and control</i> the project</p>			
6	<p>a) <b>Discuss various contents of a project report.</b>  <b>MEANING OF PROJECT REPORT</b>  A Project Report is a document which <b>provides details on the overall picture of the proposed business</b>. The project report gives an account of the project proposal to ascertain the prospects of the proposed plan/activity.  Project Report is a <b>written document</b> relating to any investment. It contains data on the basis of which the <u>project has been appraised</u> and found feasible. It consists of information on economic, technical, financial, managerial and production aspects. It enables the entrepreneur to know the inputs and helps him to obtain loans from banks or financial Institutions.  The project report contains detailed information about Land and buildings required, Manufacturing Capacity per annum, Manufacturing Process, Machinery &amp; equipment along with their prices and specifications, Requirements of raw materials, Requirements of Power &amp; Water, Manpower needs, Marketing Cost of the project, production, financial analyses and economic viability of the project.  <b>CONTENTS OF A PROJECT REPORT</b>  Following are the contents of a project report.  <b>1. General Information</b>  A project report must provide information about the details of the industry to which the project belongs to. It must give information about the past experience, present status, problems and future prospects of the industry. It must give information about the product to be manufactured and the reasons for selecting the product if the proposed business is a manufacturing unit. It must spell out the <u>demand for the product</u> in the local, national and the global market. It should clearly identify the alternatives of business and should clarify the reasons for starting the business.  <b>2. Executive Summary</b>  A project report must state the objectives of the business and the methods through which the business can attain success. The overall picture of the business with regard to capital, operations, methods of functioning and execution of the business must be stated in the project report. It must mention the assumptions and the risks generally involved in the business.  <b>3. Organization Summary</b>  The project report should indicate the organization structure and pattern proposed for the unit. It must state whether the ownership is based on <u>sole proprietorship, partnership or joint stock company</u>. It must provide information about the bio data of the promoters including financial soundness. The name, address, age qualification and experience of the proprietors or promoters of the proposed business must be stated in the project report.  <b>4. Project Description</b>  A brief description of the project must be stated and must give details about the following:</p> <ul style="list-style-type: none"> <li>▪ <u>Location of the site,</u></li> <li>▪ Raw material requirements,</li> <li>▪ Target of production,</li> <li>▪ Area required for the workshed,</li> <li>▪ Power requirements,</li> <li>▪ Fuel requirements,</li> <li>▪ Water requirements,</li> <li>▪ Employment requirements of skilled and unskilled labour,</li> <li>▪ Technology selected for the project,</li> <li>▪ Production process,</li> <li>▪ Projected production volumes, unit prices,</li> <li>▪ Pollution treatment plants required.</li> </ul> <p>If the business is service oriented, then it must state the type of services rendered to customers. It should state the method of providing service to customers in detail.</p>	05 M	05 M	10 M

## 5. Marketing Plan

The project report must clearly state the total expected demand for the product. It must state the price at which the product can be sold in the market. It must also mention the strategies to be employed to capture the market. If any, after sale service is provided that must also be stated in the project. It must describe the mode of distribution of the product from the production unit to the market. Project report must state the following:

- Type of customers,
- Target markets,
- Nature of market,
- Market segmentation,
- Future prospects of the market,
- Sales objectives,
- Marketing Cost of the project,
- Market share of proposed venture,
- Demand for the product in the local, national and the global market,
- It must indicate potential users of products and distribution channels to be used for distributing the product.

## 6. Capital Structure and operating cost

The project report must describe the total capital requirements of the project. It must state the source of finance, it must also indicate the extent of owners funds and borrowed funds. Working capital requirements must be stated and the source of supply should also be indicated in the project. Estimate of total project cost, must be broken down into land, construction of buildings and civil works, plant and machinery, miscellaneous fixed assets, preliminary and preoperative expenses and working capital. Proposed financial structure of venture must indicate the expected sources and terms of equity and debt financing. This section must also spell out the operating cost

## 7. Management Plan

The project report should state the following.

- a. Business experience of the promoters of the business,
- b. Details about the management team,
- c. Duties and responsibilities of team members,
- d. Current personnel needs of the organization,
- e. Methods of managing the business,
- f. Plans for hiring and training personnel,
- g. Programmes and policies of the management.

## 8. Financial Aspects

In order to judge the profitability of the business a projected profit and loss account and balance sheet must be presented in the project report. It must show the estimated sales revenue, cost of production, gross profit and net profit likely to be earned by the proposed unit. In addition to the above, a projected balance sheet, cash flow statement and funds flow statement must be prepared every year and at least for a period of 3 to 5 years.

The income statement and cash flow projections should include a three-year summary, detail by month for the first year, and detail by quarter for the second and third years. Break even point and rate of return on investment must be stated in the project report. The accounting system and the inventory control system will be used is generally addressed in this section of the project report. The project report must state whether the business is financially and economically viable.

## 9. Technical Aspects

Project report provides information about the technology and technical aspects of a project. It covers information on Technology selected for the project, Production process, capacity of machinery, pollution control plants etc.

## 10. Project Implementation

Every proposed business unit must draw a time table for the project. It must indicate the time within the activities involved in establishing the enterprise can be completed. Implementation schemes show the timetable envisaged for project preparation and completion.

## 11. Social responsibility

The proposed units draws inputs from the society. Hence its contribution to the society

	<p>in the form of employment, income, exports and infrastructure. The output of the business must be indicated in the project report.</p>			
<p>b)</p>	<p><b>Explain project identification and its importance.</b></p> <p><b>Introduction</b></p> <p>The key feature of this activity is recognizing that identifying candidate projects is something that an organization should do on a regular basis, not just once each year. Further, when examining projects for approval, it is vital to also examine the resource capacities and capabilities available for assignment. It is futile to assign a major new project requiring extensive discovery of business requirements if no business analysts are available. Project Identification proceeds Project Initiation.</p> <p><b>Process Description</b></p> <p>Project Identification is a repeatable process for documenting, validating, ranking and approving candidate projects within an organization.</p> <p><b>Process Purpose</b></p> <p>Due to the changing financial conditions within the total organization, it is necessary to establish a stable process for approving projects for initiation. This process will...</p> <ul style="list-style-type: none"> <li>▪ Validate the business reason for each candidate project.</li> <li>▪ Provide the base information for more informed financial commitments to projects.</li> <li>▪ Establish a more objective ranking of candidate projects.</li> <li>▪ Allow a more effective matching of skilled resources to the right project.</li> <li>▪ Avoid over-allocating limited skilled resources.</li> <li>▪ Anticipate future human resource quantities and skills.</li> <li>▪ Provide a valid basis for staff training.</li> <li>▪ Make Project Initiation faster and more efficient.</li> </ul> <p>Because priorities, finances and resources may change at any time, it is critical that this process be well-defined and easy to follow. It is also important that its value is understood and supported by corporate leaders and the business organization.</p> <p><b>Use Criteria</b></p> <p>This process is intended for proposed projects that...</p> <ul style="list-style-type: none"> <li>▪ Are of significant size and will require a significant amount of time to complete.</li> <li>▪ Must be tightly coordinated with other active projects.</li> <li>▪ Will use new or emerging technology.</li> <li>▪ Will require a new work process.</li> <li>▪ Are intended for a new customer or unproven market.</li> <li>▪ Will impact numerous departments or organizations.</li> <li>▪ Are highly critical to the success of the business.</li> <li>▪ Are a known high risk.</li> </ul> <p>This process is not intended for operational requests (Type 3) that may be handled directly by the IT Help Desk or small initiatives (Type 2) that are routed to IT Managers for immediate scheduling and execution.</p> <p><b>Process Flow</b></p> <p><b>1.0 CERTIFY BUSINESS CASE</b></p> <p><b>1.1 Document Business Case:</b> Evaluate all Candidate Project Information that has been provided by the requesting organization or that has been gathered by a technical analyst. If additional information is needed, issue an Information Request to the requester. Format this information into a Business Case. Assign the Candidate Project a new Project Code.</p> <p><b>1.2 Review Business Case:</b> The Business Case will be examined by an screening body with the corporate authority to accept or reject a Candidate Project. When a Business Case is accepted, the Candidate Project is captured in a repository for ranking and selection. If additional information is required on a Business Case, note it as “pending” and issue an Information Request to the requester. If a Business Case is rejected, send the information to the requester with an explanation for the rejection. Remain this information in a repository.</p> <p><b>1.3 Update Business Case:</b> When additional information is received on a Candidate Project, obtain the pending Business Case from the repository and revise the data. This Business Case should now be reconsidered by</p>	<p>05 M</p>	<p>05 M</p>	

		<p>process 1.2.</p> <p><b>2.0 Rank Candidate Projects:</b> When requested, all Candidate Projects that are in the repository should be objectively ranked in order of significance. The ranking criteria should include...</p> <ul style="list-style-type: none"> <li>▪ Target due dates</li> <li>▪ Impact on the total business</li> <li>▪ Impact on the technology architecture</li> <li>▪ Impact on other applications</li> <li>▪ Project size, cost and duration</li> <li>▪ Project risk</li> </ul> <p>It will be helpful to rank projects against each of these criteria separately and then compile a single ranking that weights each of these criteria against each other. This ranking process is typically used to feed quarterly budget decisions but may be requested at any time.</p> <p><b>3.0 Evaluate Resources:</b> An updated Skills Inventory should be maintained for all corporate (Business Unit and Information Technology Department) resources that are available for project assignment. Additionally, an inventory of available contract resources should also be captured. The purpose of this Skills Inventory is to understand the true capabilities and capacities of these resources.</p> <p><b>4.0 Determine Resource Needs:</b> By evaluating the Skills Inventory and the Candidate Project repository, this process will identify anticipated requirements for quantities and capabilities of future resources. This information will provide...</p> <ul style="list-style-type: none"> <li>▪ The identification of critical training needs</li> <li>▪ A basis for employment opportunities</li> <li>▪ Criteria for contract personal</li> </ul> <p>This process should be reviewed on a regular basis by Resource Managers within the organization and can be used for staff career counseling.</p> <p><b>5.0 Approve Project</b></p> <ul style="list-style-type: none"> <li>▪ <b>5.1 Select Project:</b> Based on the information provided by the ranking process, the Core Process Owners of the business will authorize a specific project for initiation. This project should now be removed as a Candidate Project.</li> <li>▪ <b>5.2 Assign Resources:</b> Even though a project has been selected, it does not become an “active” project until resources are approved and deployed against it. It is critical to remember that when resources are assigned from the Skills Inventory, this deployment has a proportionate impact on the resource’s availability. The organization must be very careful to not over-commit limited resources in an attempt to “look” more productive.</li> </ul>			
7	a)	<p><b>Describe the various factors to be considered for selecting a project.</b></p> <p>Selecting the right project management software will depend on several factors. With multiple options available on the market today, how exactly will you choose the tool most suitable for your specific requirements? Being aware of the different important factors to consider is crucial to helping you make a distinction between the best tools, and those that are just not fit for the job. Here are the top 10 important considerations when selecting a project management software.</p> <p><b>1. Collaboration</b></p> <p>The project management software must allow for collaboration on projects so teams can work together, either on-site or remotely. Collaboration will make it a lot easier for every team member to contribute input at every stage of the project.</p> <p><b>2. Customizable</b></p> <p>You do not have to change how the organization runs just to accommodate a new system. The best project management software must easily be configured to fit your organization’s needs. So you must pay attention to the level of customization the software offers. Flexibility is a highly important aspect to consider since business working patterns and demands are expected to change over time.</p> <p><b>3. Scalability</b></p> <p>The demand on the software increases as your business grows. Don’t let limited features stop your business from developing; check if the software you are considering can be integrated with additional modules or storage space. Choose one that can support the growing needs of your business.</p> <p><b>4. Ease of use</b></p>	05 M	05 M	10 M

	<p>Often, some tools are quite complicated to use and require several days of training. Find a product that is straightforward to use and is suitable for your business. Consider using tools offering free trials so you will get to see its capabilities before purchasing it.</p> <p>User experience is very important. An excellent system will even go beyond having a pleasant interface. It will demonstrate ease of use for all users in that it boosts work productivity rather than delays it.</p> <p><b>5. Real-Time Reporting</b></p> <p>With real-time business reporting solutions, you will be able to pull data from different areas of the project management software so you can instantly use it to yield reports about the project's current status.</p> <p><b>6. Security</b></p> <p>Functionality is great, but if your data is not safe, then your project's integrity is not secure either. So consider the security options offered by your preferred software provider. When they are hosting the software online, make sure that they have the right encryption. A separate dedicated hosting platform must be used by your provider to make sure that your data is safe and protected from unauthorized people.</p> <p><b>7. Professional Interface</b></p> <p>There are plenty of tools you can choose from but some may look old-fashioned. Functionality is your primary criteria; however, it won't hurt if you go for software that looks attractive.</p> <p><b>8. Timesheets</b></p> <p>Opt for project management software that will include timesheets as this will help you monitor tasks. It can provide early warnings regarding delays as well as allow you to check the validity of task estimates. Team members must find it simple and easy to complete their timesheets.</p> <p><b>9. Integration</b></p> <p>The software might need to work with other communication, accounting and reporting systems that are already in use in your company. Make sure to invest in a tool that is compatible with all of your current systems.</p> <p><b>10. Consolidation</b></p> <p>Using plenty of tools to manage projects will create more room for human error and complications. With a consolidated system, all aspects of project management will be processed together. From status update, to risk management, to progress tracking, an excellent system will help you stay on track without multiple additional tools.</p> <p><b>Conclusion</b></p> <p>Making the shift to user-friendly, improved project management software is the first step in making sure that all projects are running efficiently, from conception to implementation to tracking. With many products to choose from, it is crucial for you to make the right choice. Take your time and test all potential software prior to making a final decision.</p>			
b)	<p><b>Discuss project analysis.</b></p> <p>What do you do when you want to figure out if something was successful or not? You analyze it. The achievements, the duration it took, the hurdles that propped up, the number of things that needed to be juggled at the same time and so on.</p> <p>Be it your graduation, your last job, your last presentation; everything requires an analysis to figure out if the time spent on it was worthy or not.</p> <p>But there's one more question we need to ask at this point.</p> <p>Is analysis only required once something is complete?</p> <p>If you want to gauge only the performance, yes. But when it comes to most things in life, we need to keep analyzing regularly to see if things are running smoothly or not. I'd have to review my content writing every now and then to figure out my mistakes, the opportunities I could have gained, the corrections I can make and so on.</p> <p>The same is applicable for every project – big or small, in an organization. A <u>study</u> conducted over the last year stated that over two-thirds of all projects were not completed on time and went over the budget as well.</p> <p>What separates the failed two-thirds of the projects from the successful one-third? Planning. Yes. But there's something even more important. Regular analysis of how</p>	05 M	05 M	

things are going.

Because think about it. If you can't visualize the problems, how are you going to solve them?

Project analysis lets you see the present problems, the foreseen problems if there are any.

Let's look at various types of project analysis.

#### **1. Budgetary Analysis:**

Suppose, the client came up and told you, 'We have a request. Instead of feature A, we would like to have feature B in our software'

You told them yes and informed the same to your team. But what if your engineers had already spent a week working on feature A?

It means you lost time as well as the number of hours multiplied into the cost per hour of each engineer.

And let's accept it. We face multiple situations like this during the project cycle. Regular budgetary analysis lets us know the project costs and whether they match the ones in the project scope.

If there are discrepancies, you'd have to look for the reasons and also cut costs in other areas if necessary.

Some organizations also emphasize on conducting a project audit to keep track of all the changes.

#### **2. Process Analysis:**

While making the project plan, you put all the tasks into your task management software and assigned them to your teammates.

But the process does not end there. You have to keep checking whether the tasks are being completed within the allotted time or not. If they are being delayed, you will have to find out the reasons as well.

In any project, there will always be a set of critical tasks. The ones that will majorly define your project success. These are the ones you will have to focus on during the analysis.

Process analysis if conducted properly will allow you to even forecast delays and devise an action plan for correcting them.

If you are into construction projects or projects that require resource handling, you will also have to monitor whether resources such as construction equipment are sufficient and will be available on the site when needed.

This will be really crucial if you have multiple construction projects going on simultaneously.

In brief, process analysis takes care of your project scheduling and resource-handling.

#### **3. Personnel Analysis:**

Your team has three software engineers. The tasks have been divided amongst them. You find out that Engineer A takes less time to complete a certain task and Engineer B is putting in work but the deadlines are not being met.

When you conduct a personnel analysis, you might come to know that the reason Engineer B is lagging behind is that he is currently working on three different projects. You then look at everyone else's workloads in your project management software and try to plan things in a way that everyone has equitable and doable workloads.

During the personnel analysis, you could also find out inefficiencies if there are any and appraise your teammates of the same.

It could also well turn out that there is too much work and less people to handle that burden. If another project turns up, it'd be difficult for the organization to meet ends. This then indicates that you should either recruit new people or not take up another project till things lighten up.

#### **4. Risk Analysis:**

What happens if your key teammate gets injured and needs to take a month off? Or your equipment malfunctions and work stops but the labour charges keep adding up? Or there is a labour strike? Or a natural calamity takes place?

As a project manager, you can hope for the best. But from experience, you know things don't always work out the way you want them to.

By conducting a risk analysis, you make sure the project doesn't go through any major changes and you have contingency plans ready.

While you can't possibly make plans for everything, you can make so for some risks. How do you determine those? From historical project records and current situation, you decide which risk factors have a high likelihood of occurring and if there'd be any serious consequences because of that.

While you might already have conducted a risk assessment during the planning stage,

	<p>regularly conducting risk analysis is a must for high-risk projects. You can keep adding and modifying things to the already planned out strategy.</p> <p><b>5. Client Requirements Analysis:</b></p> <p>A project plan normally lists down all the client requirements. But sometimes, it fails to go into the details. The most important thing in this analysis stage is drawing out the team's attention on priority requirements.</p> <p>These are those requirements that the client places high value on. While a client may let go of a minor glitch in low-value requirements or the additional features you put in, an error in the high-value requirement can mean sour relations and backlashes from the client.</p> <p>In this type of analysis, you also see to it if the client approvals are being taken regularly and if client's requirements are being fulfilled at each stage of the project.</p>			
a)	<p><b>Describe the concepts PERT and CPM.</b></p> <p><b>Project Evaluation Review Technique (PERT)</b></p> <p>In project management, Project Evaluation Review Technique or PERT is used to identify the time it takes to finish a particular task or activity. It is a system that helps in proper <u>scheduling and coordination</u> of all tasks throughout the project. It also helps in keeping track of the progress, or lack thereof, of the project. In the 1950s, Project Evaluation Review Technique was developed by the <u>US Navy</u> to manage the Polaris submarine missile program of their Special Projects Office.</p> <p>Knowing the time it would take to execute a project is crucial as it helps project managers decide on other factors such as the budget and <u>task delegation</u>. No matter how big or small a project is, estimates can be too optimistic or pessimistic, but using a PERT chart will help determine more realistic estimates.</p> <p><b>Creating a PERT Chart</b></p> <p>A flowchart is used to depict the Project Evaluation Review Technique. Nodes represent the events, indicating the start or end of the activities. The directorial lines indicate the tasks that need to be completed, and the arrows show the sequence of the activities.</p> <p>There are four definitions of time needed to finish an activity:</p> <ul style="list-style-type: none"> <li>• Optimistic time – The least amount of time to complete a task</li> <li>• Pessimistic time – The maximum amount of time to complete a task</li> <li>• Most likely time – Assuming there are no problems, it is the best estimate of how long it would take to complete a task.</li> <li>• Expected time – Assuming there are problems, it is the best estimate of how long it would take to complete a task.</li> </ul> <p>Here are several terms used in a PERT chart:</p> <ul style="list-style-type: none"> <li>• Float/Slack – Refers to the amount of time a task can be delayed without resulting in an overall delay to other tasks or the project</li> <li>• Critical Path – Indicates the longest possible continuous path from the start to the end of a task or event</li> <li>• Critical Path Activity – Refers to an activity without slack</li> <li>• <u>Lead Time</u> – Refers to the amount of time needed to finish a task without affecting subsequent tasks</li> <li>• Lag Time – The earliest time by which a successor event can follow another event</li> <li>• Fast Tracking – Refers to handling tasks or activities in parallel</li> <li>• Crashing Critical Path – Shortening the amount of time to do a critical task</li> </ul> <p>To implement a PERT chart:</p> <ul style="list-style-type: none"> <li>• Identify the different tasks needed to complete a project. Make sure to add these in the right order and indicate the duration of each task.</li> <li>• Create a network diagram. Use arrows to represent the activities and nodes as milestones.</li> <li>• Determine the critical path and possible hack.</li> </ul> <p><b>Critical Path Method (CPM)</b></p> <p>Critical path method is based on mathematical calculations and it is used for scheduling project activities. This method was first introduced in 1950s as a joint venture between Remington Rand Corporation and DuPont Corporation.</p> <p>The initial critical path method was used for managing plant maintenance projects. Although the original method was developed for construction work, this method can be used for any project where there are interdependent activities.</p>	05 M	05 M	10 M

	<p>In the critical path method, the critical activities of a program or a project are identified. These are the activities that have a direct impact on the completion date of the project.</p> <p><b>Key Steps in Critical Path Method</b></p> <p>Let's have a look at how critical path method is used in practice. The process of using critical path method in project planning phase has six steps.</p> <p><b>Step 1: Activity specification</b></p> <p>You can use the Work Breakdown Structure (WBS) to identify the activities involved in the project. This is the main input for the critical path method.</p> <p>In activity specification, only the higher-level activities are selected for critical path method.</p> <p>When detailed activities are used, the critical path method may become too complex to manage and maintain.</p> <p><b>Step 2: Activity sequence establishment</b></p> <p>In this step, the correct activity sequence is established. For that, you need to ask three questions for each task of your list.</p> <ul style="list-style-type: none"> <li>• Which tasks should take place before this task happens.</li> <li>• Which tasks should be completed at the same time as this task.</li> <li>• Which tasks should happen immediately after this task.</li> </ul> <p><b>Step 3: Network diagram</b></p> <p>Once the activity sequence is correctly identified, the network diagram can be drawn (refer to the sample diagram above).</p> <p>Although the early diagrams were drawn on paper, there are a number of computer softwares, such as Primavera, for this purpose nowadays.</p> <p><b>Step 4: Estimates for each activity</b></p> <p>This could be a direct input from the WBS based estimation sheet. Most of the companies use 3-point estimation method or COCOMO based (function points based) estimation methods for tasks estimation.</p> <p>You can use such estimation information for this step of the process.</p> <p><b>Step 5: Identification of the critical path</b></p> <p>For this, you need to determine four parameters of each activity of the network.</p> <ul style="list-style-type: none"> <li>• Earliest start time (ES) - The earliest time an activity can start once the previous dependent activities are over.</li> <li>• Earliest finish time (EF) - ES + activity duration.</li> <li>• Latest finish time (LF) - The latest time an activity can finish without delaying the project.</li> <li>• Latest start time (LS) - LF - activity duration.</li> </ul> <p>The float time for an activity is the time between the earliest (ES) and the latest (LS) start time or between the earliest (EF) and latest (LF) finish times.</p> <p>During the float time, an activity can be delayed without delaying the project finish date.</p> <p>The critical path is the longest path of the network diagram. The activities in the critical path have an effect on the deadline of the project. If an activity of this path is delayed, the project will be delayed.</p> <p>In case if the project management needs to accelerate the project, the times for critical path activities should be reduced.</p> <p><b>Step 6: Critical path diagram to show project progresses</b></p> <p>Critical path diagram is a live artifact. Therefore, this diagram should be updated with actual values once the task is completed.</p> <p>This gives more realistic figure for the deadline and the project management can know whether they are on track regarding the deliverables.</p>			
8	<p><b>b)</b></p> <p><b>Explain uses and limitations of PERT and CPM.</b></p> <p><b>Advantages of PERT</b></p> <p>Here are several benefits of using PERT in project management:</p> <ol style="list-style-type: none"> <li>1. It helps maximize the use of resources.</li> <li>2. It makes project planning more manageable.</li> <li>3. It's useful even if there is little or no previous schedule data.</li> <li>4. It enables project managers to determine a more definite completion date.</li> </ol>	05 M	05 M	

	<p><b>Disadvantages of PERT</b></p> <p>Like any other method, PERT comes with its share of limitations:</p> <ol style="list-style-type: none"> <li>1. In complex projects, many find PERT hard to interpret, so they also use a <u>Gantt Chart</u>, another popular method for project management.</li> <li>2. It can be tedious to update, modify and maintain the PERT diagram.</li> <li>3. It entails a subjective time analysis of activities, and for those who are less experienced or biased, it may affect the project's schedule.</li> </ol> <p><b>Advantages of CPM:</b></p> <p><b>The important advantages of CPM technique are:</b></p> <ol style="list-style-type: none"> <li>1. It helps in ascertaining the time schedule of activities having sequential relationship.</li> <li>2. It makes control easier for the management.</li> <li>3. It identifies the most critical elements in the project. Thus, the management is kept alert and prepared to pay due attention to the critical activities of the project.</li> <li>4. It makes better and detailed planning possible.</li> </ol> <p><b>Limitation of CPM:</b></p> <ol style="list-style-type: none"> <li>1. CPM operates on the assumption that there is a precise known time that each activity in the project will take. But, it may not be true in real practice.</li> <li>2. CPM time estimates are not based on statistical analysis.</li> <li>3. It cannot be used as a controlling device for the simple reason that any change introduced will change the entire structure of network. In other words, CPM cannot be used as a dynamic controlling device.</li> </ol>			
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