

J & K ENTREPRENEURSHIP DEVELOPMENT INSTITUTE (JKEDI)

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DETAILED TECHNO-ECONOMIC
CUM PRE-INVESTMENT PROJECT
REPORT

ON

(DIAGNOSTIC CENTRE)

INTRODUCTION

In medicine, **diagnosis** (plural, *diagnoses*) is the process of identifying a medical condition or disease by its signs, symptoms, and from the results of various diagnostic procedures. The conclusion reached through this process is called a *diagnosis*. The term "diagnostic criteria" designates the combination of signs, symptoms, and test results that allows the doctor to ascertain the diagnosis of the respective disease.

However, it has two distinct dictionary definitions. The first definition is "the recognition of a disease or condition by its outward signs and symptoms, while the second definition is "the analysis of the underlying physiological/biochemical cause(s) of a disease or condition

Overview

Typically, a person with abnormal *symptoms* will consult a physician, who will then obtain a history of the patient's illness and examine him for *signs* of disease. The physician will formulate a hypothesis of likely diagnoses and in many cases will obtain further testing to confirm or clarify the diagnosis before providing treatment.

Medical tests commonly performed are measuring blood pressure, checking the pulse rate, listening to the heart with a stethoscope, urine tests, fecal tests, saliva tests, blood tests, medical imaging, electrocardiogram, hydrogen breath test and occasionally biopsy.

For instance, a common disorder such as pneumonia was nevertheless used as a diagnosis before the germ theory was accepted, and the disease was defined as a complex of many symptoms consisting of cough, sputum production, fever and chills. Later, as the actual cause was assigned to micro-organisms, the term diagnosis included the causality, e.g., pneumococcal pneumonia, suggesting not only a spectrum of symptoms but also a cause for the symptoms.

Advances in medicine could be described as a shift from definition #1 to definition #2 as scientific causalities were discovered. This differentiation of the term diagnosis is critically important because widespread disagreement exists between medical and psychiatric practitioners as to whether causalities for various diseases and disorders are known or not.^[citation needed] If causalities are assumed to be known, then authentic cures can be obtained by correcting the causal abnormalities. If causalities are assumed to be unknown, then palliative treatments to reduce symptoms are the best treatments possible.

Relationship of diagnosis to medical practice

A physician's job is to know the human body and its functions in terms of normality (homeostasis). The four cornerstones of diagnostic medicine, each essential for understanding homeostasis, are: anatomy (the structure of the human body), physiology (how the body works), pathology (what can go wrong with the anatomy and physiology) and psychology (thought and behavior). Once the doctor knows what is normal and can measure the patient's current condition against those norms, she or he can then determine the patient's particular departure from homeostasis and the degree of departure. This is called the **diagnosis**. Once a diagnosis has been reached, the doctor is able to propose a management plan, which will include treatment as well as plans for follow-up. From this point on, in addition to treating the patient's condition, the doctor educates the patient about the causes, progression, outcomes, and possible treatments of his ailments, as well as providing advice for maintaining health.

It should be noted however, that medical diagnosis in psychology or psychiatry is problematic. Apart from the fact that there are differing theoretical views toward mental conditions and that

there are few "lab" tests available for various major disorders (e.g., clinical depression), a causal analysis with respect to symptomatology and disorder/disease is not always possible. As a result, most if not all mental conditions, function as both symptoms as well as disorders. There are often functional descriptions provided for psychological disorders and these are vulnerable to circular reasoning due to the etiological fuzziness inherent of these diagnostic categories. (BDG, 2006)

Diagnostic procedure

Diagnosis is a fluid process in which the physician responds to information garnered from the patient and others, from a physical examination of the patient, and from medical tests performed upon the patient.

The doctor should consider the patient in his 'well' context rather than simply as a walking medical condition. This entails assessing the socio-political context of the patient (family, work, stress, beliefs), in addition to the patient's physical body, as this often offers vital clues to the patient's condition and its management.

The process of diagnosis begins when the patient consults the doctor and presents a set of complaints (the symptoms). If the patient is unconscious, this condition is the de facto complaint. The doctor then obtains further information from the patient himself (and from those who know him, if present) about the patient's symptoms, his previous state of health, living conditions, and so forth.

Rather than consider the myriad diseases that could afflict the patient, the physician narrows down the possibilities to the illnesses likely to account for the apparent symptoms, making a list of only those conditions that could account for what is wrong with the patient. These are generally ranked in order of probability.

The doctor then conducts a physical examination of the patient, studies the patient's medical record, and asks further questions as he goes, in an effort to rule out as many of the potential conditions as possible. When the list is narrowed down to a single condition, this is called the differential diagnosis, and provides the basis for a hypothesis of what is ailing the patient.

Unless the physician is certain of the condition present, further medical tests are performed or scheduled (such as medical imaging), in part to confirm or disprove the diagnosis but also to document the patient's status to keep the patient's medical history up to date. Consultations with other physicians and specialists in the field may be sought. If unexpected findings are made during this process, the initial hypothesis may be ruled out and the physician must then consider other hypotheses.

Despite all of these complexities, most patient consultations are relatively brief, because many diseases are obvious, or the physician's experience may enable him to recognize the condition quickly. Another factor is that the decision trees used for most diagnostic hypothesis testing are relatively short.

Once the physician has completed the diagnosis, he explains the prognosis to the patient and proposes a treatment plan which includes therapy and follow-up (further consultations and tests to monitor the condition and the progress of the treatment, if needed), usually according to the guideline provided by the medical field on the treatment of the particular illness.

Treatment itself may indicate a need for review of the diagnosis if there is a failure to respond to treatments that would normally work.

A *laboratory diagnosis* is either a substitution or complement to the diagnosis made by examination of the patient. For instance, a proper diagnosis of infectious diseases usually requires both an examination of symptoms, as well as laboratory characteristics of the pathogen involved.

History of medical diagnostics

The history of medical diagnosis began in earnest from the days of Imhotep in ancient Egypt and Hippocrates in ancient Greece but is far from perfect despite the enormous bounty of information made available by medical research including the sequencing of the human genome. The practice of diagnosis continues to be dominated by theories set down in the early 20th century.

Ancient China

In Traditional Chinese Medicine, there are four diagnostic methods: inspection, auscultation-olfaction, interrogation, and palpation.^[2]

Ancient Egypt

An Egyptian medical textbook, the Edwin Smith Papyrus written by Imhotep (fl. 2630-2611 BC), was the first to apply the method of diagnosis to the treatment of disease.^[3]

Ancient Babylonia

A Babylonian medical textbook, the *Diagnostic Handbook* written by Esagil-kin-apli (fl. 1069-1046 BC), introduced the use of empiricism, logic and rationality in the diagnosis of an illness or disease.^[4] The book made use of logical rules in combining observed symptoms on the body of a patient with its diagnosis and prognosis.^[5] He described the symptoms for many varieties of epilepsy and related ailments along with their diagnosis and prognosis.^[6]

Ancient Greece

Over two thousand years ago, Hippocrates recorded the association between disease and heredity. In similar fashion, Pythagoras noted the association between metabolism and heredity (allergy to Fava beans). The medical community, however, has only recently acknowledged the importance of genetics and its relevance to mainstream medicine.

Medieval Persia

Avicenna (980-1037), in *The Canon of Medicine*, pioneered the idea of a syndrome in the diagnosis of specific diseases.^[7]

The Oslerian ideal

The ideals of William Osler who transformed the practice of medicine in the early 1900s were based on the principles of the diagnosis and treatment of disease. According to Osler, the functions of a physician were to be able to identify disease and its manifestations, understand its mechanisms, how it may be prevented and how it may be cured. For his medical students he believed that the best textbook was the patient himself – analysis of morbid anatomy and pathology were the keys. The Oslerian ideal continues today, as the basis of the doctor's strategy is, "What disease does this patient have and what is the best way for treatment?" The emphasis is on the classification of the disease in order to use the remedies available for its effects to be reversed or ameliorated. The human being in question is representative of a class of people with

this type of disease whereas the biological individuality of this person is not given any great weight.

Garrod's view

The successor to William Osler as Regius Professor at Oxford was Archibald Garrod. Garrod echoed the observations of his Greek counterparts of two millennia ago, *...our chemical individualities are due to our chemical merits as well as our chemical shortcomings; and it is more nearly true to say that the factors which confer upon us our predispositions to and immunities from various mishaps which are spoken of as diseases, are inherent in our very chemical structure; and even in the molecular groupings which confer upon us our individualities, and which went into the making of the chromosomes from which we sprang.* Because Garrod practiced in the early 1900s, well before the knowledge of DNA encoding genes that in turn encoded proteins responsible for bodily structure and functions were discovered, it took some time before medicine could fully appreciate the fundamental importance of his concept of diagnosis.

Present-day Oslerian practice

Whereas Osler laid the founding principles by which medicine should be practiced, Garrod placed these principles in a greater context of a chemical individuality that is inherited and is subject to the mechanisms of evolutionary selection. The Oslerian ideal of medical practice continues to dominate medical philosophy today. The patient is a collective of symptoms to be characterized and analyzed algorithmically in order to draw a diagnosis and subsequently produce a strategy of treatment. Medicine is about problems based solutions. In keeping with this philosophy, today's pathology reports provide a momentary snapshot of the patient's biochemical profile, highlighting the end result of the disease process.

Influence of DNA technology

Garrod's conception of biological individuality was confirmed with the advent of the sequencing of the human genome. Finally the subtle relationship between inheritance, individuality and environment became apparent via the variations detected in DNA. In each patient's DNA lies a script for how their bodies will change and become ill as well as how they will handle the assaults of the environment from the beginning of their life to its end. It is hoped that by knowing a patient's genes that the biological strengths and weaknesses in respect to these assaults will be revealed and disease processes can be predicted before they have the opportunity to manifest. Although knowledge in this area is far from complete, there are already medical interventions based on this. More importantly, the physician, forewarned with this knowledge can guide the patient towards appropriate lifestyle changes to anticipate and mitigate disease processes.

MARKET POTENTIAL

It is in this perspective that development of health care assumes significant importance. New challenges and new opportunities for investing in health care i.e. in hospitals, diagnostic centers and nursing homes etc. have arisen. Diagnostic centers have very good potential in upcoming cities, and towns of the Jammu & Kashmir

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A full fledged diagnostic center will provide a comprehensive range of services. the range of services are stated below:

- Ultrasound
- X-Ray
- EMG
- ECG, EEG Simple X-Ray/ Skiagrams
- Special X-Ray
- Ultrasonography
- Pathological Tests

Keeping into consideration the present position in the valley there is a huge scope in setting up a DIAGNOSTIC CENTRE and the location of the present DIAGNOSTIC CENTRE is in the heart of the Town and is run by professional which will additionally increase the performance of this DIAGNOSTIC CENTRE.

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PROJECT COST SUMMARY			
S.NO	PARTICULARS		AMOUNT(LACS)
1	LAND		-----
2	Civil Works		NIL
3	Plant & Machinery		6.65
4	Miscellaneous Fixed Assets		1.70
5	Preliminary & Preoperative expenses		0.65
6	Working Capital Requirement		1.00
			10.00
MEANS OF FINANCE			
1	Seed Capital (Maximum for this Category)		3.00
2	Promoters Contribution		0.50
3	Loan from Bank (65 %)		6.50
DETAILS OF LOANS			
A	Long Term Investment		9.00
1	Promoters Contribution/Seed Money		3.15
2	Term Loan From Bank		5.85
B	Working Capital Requirement		1.00
1	Promoters Contribution/Seed Money		0.35
2	Working Capital Finance From Bank		0.65

POLLUTION NORMS

1: Apart from the other recommendations, the promoter has agreed in principle that he will strictly adhere pollution norms as and when shall be implemented and shall use all possible devices to prevent pollution measures.

2: The machines provided in the project report shall be housed in acoustic proof room and shall be provided with anti –vibration mounting/pads in order to reduce the pitch of the noise within the prescribed norms, therefore, the promoter is advised to purchase machinery from the approved manufacture having BIS certifications both for quality as well as safety measures, while as the captive power i.e. D’G set as and when installed shall be provided with canopies and other certified equipment’s, which would reduce the emission level within the prescribed norms, therefore, the cost to be incurred for such equipment’s has been worked out and is provided under Misc.fixed head of the project report.

3: Adequate provisions of toilets, septic and soakage pit has been made to take care of human wastage and the waste water before discharging in the main drainage system, hence, there is no effluents discharged in the form of solid, liquid and gaseous and the plant, thus is considered free from the pollution aspects.

4. THE PROJECT IS POLLUTION FREE

Manpower

The category wise break-up manpower including salary as shown at Annexure. A Manager who would be assisted by his selected staff member to look after accounts as well as procurement of raw material and sale of the product would look after the operations of the factory. Regarding technical staff, the production function would be looked after by a production foreman/supervisor who would be assisted by machine and other skilled operators to look after various jobs. The unit would provide employment opportunities to 4 number of persons including those required under administrative categories. The break up of requirement, monthly salary, annual salary as well as total cost on manpower. Necessary provision of perks and annual increase in salaries made in the estimates. It may be mentioned that except for the technical staff all the manpower will be recruited from local sources, if need arises, the same could be recruited from the neighboring states.

SEED CAPITAL ASSISTANCE

The Promoter is setting up the unit under Sher-E-Kashmir Employment & Welfare Programme for the Youth (SKEWPY), an initiative of Government of Jammu and Kashmir for unemployed youth of J&K State. Under the Scheme, the Promoter, being a MBA , will be eligible for Seed Capital equivalent to 35% of the Project Cost of Rs.10.00 lakhs upto a maximum of Rs.3.00 LACS. The Seed Capital Scheme is implemented through J&K Entrepreneurship Development Institute (JKEDI). Loan assistance of Rs.6.50 lakhs at 65% of the Project Cost is proposed to be sanctioned by J&K Bank Ltd. at 9.00% rate of Interest. The balance amount of Rs.0.50 lakhs to meet the shortfall in the Project Cost of Rs.10.00 lakhs will be met by the Promoter from own sources.

CONCLUSION

On critical examination and analysis of various indicators, it may be stated that the proposed unit is a bankable proposition, deserving the support and favourable consideration of Institution/Bank(s)

DETAILS OF PRELIMINARY & PRE-OPERATIVE EXPENSES		
S.NO	PARTICULARS	AMOUNT(LACS)
1	Traveling & Conveyance	0.05
2	Printing & Stationary	0.02
3	Professional Charges	0.03
4	Legal & Mortgage Expenses	0.02
5	Misc. Expenses	0.03
6	Interest During Construction Period	0.50
		0.65

DETAILS OF MISCELLANEOUS FIXED ASSETS				
S.NO	PARTICULARS	Qty/Nos	Rate	Amount (Rs in Lacs)
1	Computer Chairs and tables	1 Sets	0.10	0.10
2	Chairs and tables	2 Sets	0.10	0.20
2	Fire Extinguishers	2	0.10	0.20
3	Fixtures	LS	0.10	0.20
4	Almunium Partitions with glasses and lockers	LS		0.50
5	Silent Generator	1	0.50	0.50
	Including Freight ,carriage & taxes	Total		1.70

DETAILS AND ESTIMATED COST ON PLANT AND MACHINERY

While arriving at the requirement of various types of equipment and machinery required for the plant, due consideration has been given to the following points.

- Minimum wastage.
- High productivity.
- Maximum flexibility in operation.
- Adequate stand by provision where ever necessary.

The production plant and equipment proposed have been selected for the envisaged production capacity and incorporates features that permit smooth operation of the plant. After making a preliminary study of the source of supply of such equipment it has been identified that all the equipments will be available indigenously and no imports will be necessary.

The concern is expected to purchase the requisite machinery from reputed authorized dealer, who would also assist in the installation of plant and machinery. For estimating the cost on plant and machinery the quotations provided to us by the promoter has been taken into account.

The details of plant & machinery is as follows: –

a) Digital Lab Equipments and accessories	Rs. 350000/-
b) DIGITAL X-RAY	Rs. 250000/-
c) Other Related Equipments	Rs. 30000/-
d) Computer	Rs. 35,000/-
Total Machinery	Rs. 665000/-

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INSTALLED CAPACITY AND PRODUCTION PROGRAMME

Keeping in view the climatic conditions and other factors prevailing in the valley into consideration, the operational hours shall be assumed as:-

<u>INSTALLED CAPACITY</u>				
<u>STATEMENT OF CALCULATION OF RAW MATERIAL AT INSTALLED CAPACITY</u>				
The Installed capacity is based on installation on Plant & Machinery, tie up with various Govt. and private doctors and organizations				
NO. OF WORKING DAYS IN A YEAR		300		
NO. OF WORKING HOURS PER DAY		8		
NO. OF SHIFTS PER DAY		SINGLE		
PARTICULARS	RATE (RS)	PATIENTS PER DAY	PER YEAR	TOTAL AMOUNT IN LACS
DIGITAL X RAY	150	10	3000	4.50
HEAMATOLOGY TESTS	60	50	15000	9.00
		TOTAL SALES		13.50

PURCHASES DURING THE YEAR

CHEMICALS, FILMS, ULTRASOUND PAPER, ENVELOPS, SYRINGES AND OTHER DISPOSABLE MEDICAL ITEMS AND EQUIPMENTS

RS. 2.00 LACS

SALES REALIZATION AND PURCHASES IN PHASED MANNER

YEAR	CAPACITY	SAL/WAG	PURCHASE	UTILITIES	SALES
	UTILISATION		(Lacs)		(lacs)
1ST	50.00	1.38	1.00	0.13	6.75
2ND	55.00	1.52	1.10	0.14	7.43
3RD	60.00	1.66	1.20	0.16	8.10
4TH	65.00	1.79	1.30	0.17	8.78
5TH	70.00	1.93	1.40	0.18	9.45
6TH	75.00	2.07	1.50	0.20	10.13
7TH	80.00	2.21	1.60	0.21	10.80
8TH	80.00	2.21	1.60	0.21	10.80

STATEMENT OF CALCULATION OF MANPOWER REQUIREMENT & THEIR				
REMUNERATION				
S.NO	PARTICULARS	Nos	Salary Per Month	Total Per Annum
1	Manager	1	10000	120000
2	Technicians	2	5000	120000
3	Helper	1	3000	36000
	Total	4		276000

ESTIMATED COST OF UTILITIES PER ANNUM

The main utilities for running the unit successfully are water and electricity.

• **Power**

1	Total connected load	= 5 hp or 3.75 KW
2.	Total power load after taking load factor (0.89)	= 3.33 KW
3.	Power consumption per annum	= 8010 Kwhr
4.	From PDD (80%) @ 2.50 Kwhr	= Rs 16020 /
5.	From own generator	= Rs 9612 /
	Total	= Rs 25632/

B) Water

The PHE departmental supply shall mostly be utilized for drinking and sanitation purposes, which is available at cheaper rates from P.H.E Department. However under certain unfavorable conditions Rs 500 / annum has been kept on account of water

Total cost on Utilities (A + B) Rs 26132 / Say Rs 0.26 Lacs

REPAIRS AND MAINTENANCE PER ANNUM.

On the basis of norms available from similar plants in actual operation provision has been made for annual cost of maintenance and repairs for the proposed items of fixed out lay. It has been taken as 2%, 3%, 4%, 5%, 5%, 6%, 6% and 6% for 1st, 2nd, 3rd, 4th, 5th, 6th, 7th and 8th year to keep the fixed assets in working conditions.

REPAIRS AND MAINTENANCE PER ANNUM.

Year	Percentage	Building	P&M	MFA	Total	R & M
1st	2%	0.00	6.65	1.70	8.35	0.17
2nd	3%	0.00	6.65	1.70	8.35	0.25
3rd	4%	0.00	6.65	1.70	8.35	0.33
4th	5%	0.00	6.65	1.70	8.35	0.42
5th	5%	0.00	6.65	1.70	8.35	0.42
6th	6%	0.00	6.65	1.70	8.35	0.50
7th	6%	0.00	6.65	1.70	8.35	0.50
8th	6%	0.00	6.65	1.70	8.35	0.50

DETAILS OF ADMINISTRATIVE EXPENSES PER ANNUM

It is taken as 0.5% of net sales in every year which includes printing, traveling, telegraph, petty expenses, audit fee, telephone bills, legal fee, bank charges and other sundry expenses both for the basic program shall be worked out as:

Year	Capacity Utilization	Sales	%	
1 st	50.00	6.75	0.5	0.03
2 nd	55.00	7.43	0.5	0.04
3 rd	60.00	8.10	0.5	0.04
4 th	65.00	8.78	0.5	0.04
5 th	70.00	9.45	0.5	0.05
6 th	75.00	10.13	0.5	0.05
7 th	80.00	10.80	0.5	0.05
8 th	80.00	10.80	0.5	0.05

DETAILS OF SELLING EXPENSES PER ANNUM

It is taken as 0.5 % of net sales in every year, which includes sales promotion expenses, advertising expenses, commission to intermediaries, carriage outwards, discount, brokerage etc.

<u>Year</u>	<u>Cap. Utiliz</u>	<u>Sales</u>	<u>%</u>	<u>Selling expenses/annum</u>
1 st	50.00	6.75	0.5	0.03
2 nd	55.00	7.43	0.5	0.04
3 rd	60.00	8.10	0.5	0.04
4 th	65.00	8.78	0.5	0.04
5 th	70.00	9.45	0.5	0.05
6 th	75.00	10.13	0.5	0.05
7 th	80.00	10.80	0.5	0.05
8 th	80.00	10.80	0.5	0.05

DETAILS OF WORKING CAPITAL REQUIREMENT AT DIFFERENT LEVELS

Working capital requirement for the composite plant depends largely upon the norms adopted for the inventories. The working capital for the envisaged program has been calculated on the basis of 50% production in the first year with 300 working days per annum. . The total working capital requirement is estimated to be Rs. 1.00 Lakhs at 50% capacity utilization, Which is the basic objective and would be financed by any commercial bank or financial institutions at normal rate of interest against a margin of Rs.0.35 Lakhs, therefore, the remaining working capital limit of Rs. 0.65 Lakhs. It becomes mandatory that every possible measure be taken to reduce the cost of its process so that the promoters are able to market the products at reasonable competitive rates. One of the important methods to accomplish this objective is to keep the cost of the capital involved in routine works as low as possible. This can be carried out by adopting reasonable financing patterns that the dependence on borrowed capital is minimum, which will have the eventual effect of reducing the interest liability as a component of operational cost. The comprehensive details of working capital requirements on the basis of forgoing inputs on account of materials, manpower, electricity, repairs and maintenance, selling and administrative besides other factors shall be considered as

YEAR	CAPACITY	SAL/WAG	PURCHASE	UTILITIES	SALES	Repair	Admn.	Selling	WIP	F.Goods
	UTILISATION		(Lacs)		(lacs)	Maint.	Expen.	Expen.		
1ST	50.00	1.38	1.00	0.13	6.75	0.17	0.03	0.03	2.51	2.58
2ND	55.00	1.52	1.10	0.14	7.43	0.25	0.04	0.04	2.76	2.84
3RD	60.00	1.66	1.20	0.16	8.10	0.33	0.04	0.04	3.01	3.09

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<u>S.no</u>	<u>Particulars</u>		<u>1st</u> <u>Year</u>		<u>2nd</u> <u>year</u>		<u>3rd</u> <u>year</u>	
			50.00		55.00		60.00	
		<u>Days</u>	<u>Amount</u>	<u>Margin</u>	<u>Amount</u>	<u>Margin</u>	<u>Amount</u>	<u>Margin</u>
1	Stock of Raw Material	30	0.10	0.00	0.11	0.00	0.12	0.00
2	Stock of work in progress	2	0.02	0.00	0.02	0.00	0.02	0.00
3	Stock of finished goods	2	0.02	0.00	0.02	0.00	0.02	0.00
4	Sundry debtors	40	0.90	0.00	0.99	0.00	1.08	0.00
5	Working expenses	30	0.02	0.02	0.03	0.03	0.03	0.03
6	Sundry Creditors	15	0.05		0.06		0.06	
7	Working capital requirement		1.00		1.11		1.21	
8	Margin money			0.35		0.35		0.35
9	Working capital limit		0.65		0.76		0.86	

FUNDING OF CAPITAL EXPENDITURE

The total capital investment cost of the project is estimated at Rs.10.00 Lakhs, which shall be financed for term loan as per the projections made in the report subject to furnishing of latest cost comparative quotations from the authorized dealers besides contribution from the promoters during the implementation of the project, the specific details interalia as:

S.no	Particulars	Amt.(Lacs)
1	Promoters contribution	0.50
2	Seed Capital	3.00
3	Long term borrowings (Term Loan)	5.85

A: Equity

The share capital of the unit has been fixed at Rs.3.50 Lakhs comprising 35 % of the total project cost. The unit has to raise share capital within this limit. The promoter shall arrange equity from the ancestral resources and from the established business of the family for the purpose of availing long term borrowings.

B: Term loan

Term loan requirement to the extent of Rs. 5.85 Lakhs for the purpose of purchases of plant & machinery and misc.fixed assets shall be made available from the financial institutions or commercial banks well operating in the valley on the basis that the unit being proven technically feasible and financially viable. As the policies are liberal for such type of ventures to avail packages/incentives to encourage the entrepreneurs to promote industrial culture in the backward area of the country. The state Govt.is equally eager to give all possible support to the development of industry in the area, where the unit is being established more so when the promoter share is about 35% of the capital formulation, which is higher than the normal requirement of funding, insisted upon by the bankers.

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INTEREST CALCULATION

It is proposed to raise the sum of Rs 5.85 lacs as long term loans from financial institutions to meet the capital cost of the project. For the purpose of calculating the interest on long-term loans an interest rate of 9.00% per annum is taken into consideration in the project report.

A: Interest on long term loan

<u>S.no</u>	<u>Particulars</u>	<u>Amt.(Lacs)</u>
		5.85
01.	Long term borrowings	
02.	Rate of interest	9.00%
03.	Installment	RS. 0.98 LACS + INTERES
04.	Repayment schedule	7 years
05	Moratorium period	1 year

YEAR	INT T/Loan	T.Loan	Decrease	Yr.Term	Rem. Term
		Payment	Term Loan	Loan Paym.	Loan
1	0.53	0.00	0.00	0.00	5.85
2	0.53	0.98	0.98	0.98	4.88
3	0.44	0.98	1.95	0.98	3.90
4	0.35	0.98	2.93	0.98	2.93
5	0.26	0.98	3.90	0.98	1.95
6	0.18	0.98	4.88	0.98	0.98
7	0.09	0.98	5.85	0.98	0.00

B: INTEREST ON WORKING CAPITAL LIMIT

To meet the working capital requirements of the project, the promoters will have to make arrangements for cash credit facilities with the nationalized bank.

RATE OF INTEREST	9.00%
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YEAR	INT W/C	Increase w/ Cap	Increase Curr. Asse	Current Assets	Working Capital
1	0.06	0.65	1.00	1.00	0.65
2	0.07	0.11	0.11	1.11	0.76
3	0.08	0.10	0.10	1.21	0.86
4	0.08	0.00	0.00	1.21	0.86
5	0.08	0.00	0.00	1.21	0.86
6	0.08	0.00	0.00	1.21	0.86
7	0.08	0.00	0.00	1.21	0.86
8	0.08	0.00	0.00	1.21	0.86

COMPUTATION OF DEPRECIATION CALCULATION

For the purpose of claiming extra depreciation and amortization, the preoperative expenses and contingencies will be capitalized with the cost of fixed assets. The distribution of pre-operative expenses and contingencies has been done approximately in proportion to the cost of all the fixed assets (except land and site development). In the estimation of cost of sales and in books of accounts of the firm the normally adopted practice is to depreciate the various assets by straight-line method.

For income tax purposes, the depreciation of depreciable assets (all fixed assets except land and site development) is carried out by written down value method.

COMPUTATION OF DEPRICIATION

S.no	Particulars	Building	P&M	MFA	Total
1	Cost Price	0.00	6.65	1.70	8.35
2	Preliminary & Preoperative exp.	0.00	0.52	0.13	0.65
	Total	0.00	7.17	1.83	9.00

Depreciation under WDV method

BUILDING

6.25

Rate of depreciation

6.25%

		Cost	Dep	WDV
1st	Year	0.00	0.00	0.00
2nd	Year	0.00	0.00	0.00
3rd	Year	0.00	0.00	0.00
4th	Year	0.00	0.00	0.00
5th	Year	0.00	0.00	0.00
6th	Year	0.00	0.00	0.00
7th	Year	0.00	0.00	0.00
8th	Year	0.00	0.00	0.00

Depreciation under WDV method

Plant & Machinery

10

Rate of depreciation

10%

		Cost	Dep	WDV
1st	Year	7.17	0.72	6.45
2nd	year	6.45	0.65	5.81
3rd	Year	5.81	0.58	5.23
4th	Year	5.23	0.52	4.70
5th	Year	4.70	0.47	4.23
6th	Year	4.23	0.42	3.81
7th	Year	3.81	0.38	3.43
8th	Year	3.43	0.34	3.09

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Depreciation under WDV method		Misc. Fixed Assets			15
Rate of depreciation			15%		
		Cost	Dep	WDV	
1st	Year	1.83	0.27	1.56	
2nd	Year	1.56	0.23	1.32	
3rd	Year	1.32	0.20	1.13	
4th	Year	1.13	0.17	0.96	
5th	Year	0.96	0.14	0.81	
6th	Year	0.81	0.12	0.69	
7th	Year	0.69	0.10	0.59	
8th	Year	0.59	0.09	0.50	

Depreciation under WDV method		Building	P&M	M F A	Total
Rate of depreciation		6.25%	10%	15%	
1st	Year	0.00	0.72	0.27	0.99
2nd	Year	0.00	0.65	0.23	0.88
3rd	Year	0.00	0.58	0.20	0.78
4th	Year	0.00	0.52	0.17	0.69
5th	Year	0.00	0.47	0.14	0.61
6th	Year	0.00	0.42	0.12	0.55
7th	Year	0.00	0.38	0.10	0.48
8th	Year	0.00	0.34	0.09	0.43

Depreciation under SL Method					
Rate of depreciation		5.00%	15%	10%	Total
Amount of depreciation		0.00	1.08	0.18	1.26

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Projected Profitability Statement

The annual cost of sales and profitability during the first eight years of operation of the plant is estimated in the following table.

S.no	Particulars	Operating Years							
		1 st	2nd	3rd	4th	5th	6th	7th	8th
1	Year of operation								
2	Capacity Utilization (%)	50.00	55.00	60.00	65.00	70.00	75.00	80.00	80.00
3	Sales realization	6.75	7.43	8.10	8.78	9.45	10.13	10.80	10.80
A:	<u>Cost of production</u>								
1	Raw Material	1.00	1.10	1.20	1.30	1.40	1.50	1.60	1.60
2	Salary & wages	1.38	1.52	1.66	1.79	1.93	2.07	2.21	2.21
3	Utilities	0.13	0.14	0.16	0.17	0.18	0.20	0.21	0.21
4	Repairs & Maintenance	0.17	0.25	0.33	0.42	0.42	0.50	0.50	0.50
5	Administrative expenses	0.03	0.04	0.04	0.04	0.05	0.05	0.05	0.05
6	Selling expenses	0.03	0.04	0.04	0.04	0.05	0.05	0.05	0.05
7	Total	2.74	3.09	3.43	3.77	4.03	4.37	4.63	4.63
8	Gross profit	4.01	4.34	4.67	5.01	5.42	5.76	6.18	6.18
B:	<u>Financial expenses</u>								
1	Interest on term loan	0.53	0.53	0.44	0.35	0.26	0.18	0.09	0.00
2	Interest on WCL	0.06	0.07	0.08	0.08	0.08	0.08	0.08	0.08
3	Depreciation (SLM)	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26
4	Total	1.84	1.85	1.77	1.69	1.60	1.51	1.42	1.34
5	Profit before tax	2.16	2.49	2.90	3.32	3.82	4.25	4.75	4.84
6	Taxation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Profit after tax	2.16	2.49	2.90	3.32	3.82	4.25	4.75	4.84
8	Withdrawals	0.00	0.00	0.00	0.50	0.50	0.50	1.00	1.00
9	Profit carried to B/S	2.16	2.49	2.90	2.82	3.32	3.75	3.75	3.84
10	Cumulative profit	2.16	4.65	7.55	10.37	13.69	17.44	21.19	25.03
11	Add back depreciation	1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26
12	Total cash surplus	3.42	5.91	8.80	11.62	14.95	18.70	22.45	26.29
C:	<u>Less payment</u>								
1	Term Loan	0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.00
2	Withdrawals	0.00	0.00	0.00	0.50	0.50	0.50	1.00	1.00
3	Total payments	0.00	0.98	0.98	1.48	1.48	1.48	1.98	1.00
4	Net Cash accruals	3.42	4.93	7.83	10.15	13.47	17.22	20.47	25.29

PAY BACK PERIOD

Pay back period is the length of time in which, the unit recovers its initial investment. It may also be defined as the number of months or years required for the unit to generate commutative gross operating surplus equal to the fixed capital investment in the project. The payback period of the unit is estimated in the following table.

<u>Year</u>	<u>CFAT</u>	<u>Cumulative Cash inflow</u>	
1st	3.42		3.42
2nd	3.74		7.16
3rd	4.16		11.32
4th	4.58		15.90
5th	5.08		20.98
6th	5.50		26.49
7th	6.01		32.50
8th	6.10		38.59
<u>2 year</u>	<u>+</u>	<u>8</u>	<u>Months</u>

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DETAILED DEBT SERVICE COVERAGE:

The debt service coverage ratio shows the ability of the unit to repay interest and principal amount of composite loans.

<u>S.no</u>	<u>Particulars</u>		<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>4th</u>	<u>5th</u>	<u>6th</u>	<u>7th</u>
A	<u>Source of funds</u>								
1	Profit after tax		2.16	2.49	2.90	3.32	3.82	4.25	4.75
2	Depreciation		1.26	1.26	1.26	1.26	1.26	1.26	1.26
3	Interest on term loan		0.53	0.53	0.44	0.35	0.26	0.18	0.09
	Total A		3.95	4.27	4.60	4.93	5.35	5.68	6.10
B	<u>Disposition of funds</u>								
4	Repayment of term loan		0.00	0.98	0.98	0.98	0.98	0.98	0.98
	Total B (3+4)		0.53	1.50	1.41	1.33	1.24	1.15	1.06
C	Debt service coverage ratio		7.50	2.84	3.25	3.72	4.32	4.94	5.74
D	<u>Average DSCR</u>		<u>4.61</u>						

BREAK EVEN ANALYSIS AT 60% UTILIZATION

The break even point analysis of the plant is developed from the assumed plant efficiency, fixed cost of sales, variable cost of sales and sales revenue.

BREAK EVEN ANALYSIS		60.00	PERCENT
S.no	Particulars	Amount.(Lacs)	
A	Sales realization	8.10	
B	Variable cost		
1	Raw material	1.20	
2	Utilities	0.16	
3	Selling expenses	0.04	
4	Interest on WCL	0.08	
	Total	1.47	
C	Contribution (A-B)	6.63	
D	Semi-variable/ fixed costs		
1	Salary & wages	1.66	
2	Repairs & maintenance	0.33	
3	Administrative expenses	0.04	
4	Interest on term loan	0.44	
5	Depreciation	1.26	
	Total	3.73	
	B. E. P.	%	56.26

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PROJECTED CASH FLOW STATEMENT

The following table gives the cash flow analysis of 8 years of operation of the plant. A cash flow statement is basically an analysis of sources of availability of funds, extent of the utilization and availability of surplus funds or their deficit at the end of each year of operation.

S.no	Particulars	Const period	1st	2nd	3rd	4th	5th	6th	7th	8th
	Capacity utilization (%)		50.00	55.00	60.00	65.00	70.00	75.00	80.00	80.00
A	Source of funds									
1	Profit before interest, tax but after depn.		2.75	3.08	3.41	3.75	4.17	4.50	4.92	4.92
2	Depreciation		1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26
3	Increase in Share Capital	3.50								
4	Increase in Term loan	5.85								
5	Increase in WCL		0.65	0.11	0.10	0.00	0.00	0.00	0.00	0.00
	Total (A)	9.35	4.66	4.45	4.77	5.01	5.42	5.76	6.18	6.18
B	Application of funds									
1	Capital expenditure	9.00								
2	Prelim / Pre-operative expenses									
3	Increase in current assets		1.00	0.11	0.10	0.00	0.00	0.00	0.00	0.00
4	Decrease in term loan		0.00	0.98	0.98	0.98	0.98	0.98	0.98	0.00
5	Interest on term loan		0.53	0.53	0.44	0.35	0.26	0.18	0.09	0.00
5a	Interest on WCL		0.06	0.07	0.08	0.08	0.08	0.08	0.08	0.08
6	Taxation		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Withdrawal		0.00	0.00	0.00	0.50	0.50	0.50	1.00	1.00
	Total (B)	9.00	1.59	1.68	1.59	1.90	1.82	1.73	2.14	1.08
C	Opening Balance		0.35	3.42	6.19	9.37	12.47	16.08	20.11	24.15
D	Net Surplus	0.35	3.07	2.77	3.18	3.10	3.61	4.03	4.03	5.10
E	Closing Balance	0.35	3.42	6.19	9.37	12.47	16.08	20.11	24.15	29.24

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PROJECTED BALANCE SHEET

The balance sheet of a unit is a very important feature of the working of the unit. In a healthy unit, there is always a growth in total assets and liabilities every year. In a projected balance sheet on the liabilities side the reserves and surplus and on the assets side the cash and bank balances should show healthy growth.

S.no	Particulars	Year	Year							
			1st	2nd	3rd	4th	5th	6th	7th	8th
A:	<u>Liabilities</u>									
1	Share Capital		3.50	3.50	3.50	3.50	3.50	3.50	3.50	3.50
2	Reserves & Surplus		2.16	4.65	7.55	10.37	13.69	17.44	21.19	25.03
3	Term Loan		5.85	4.88	3.90	2.93	1.95	0.98	0.00	0.00
4	WCL		0.65	0.76	0.86	0.86	0.86	0.86	0.86	0.86
	Total		12.17	13.78	15.81	17.65	20.00	22.77	25.55	29.39
B:	<u>Assets</u>									
1	Gross Block		9.00	7.74	6.48	5.22	3.97	2.71	1.45	0.19
2	Depreciation		1.26	1.26	1.26	1.26	1.26	1.26	1.26	1.26
3	Net Block		7.74	6.48	5.22	3.97	2.71	1.45	0.19	-1.07
4	Current Assets		1.00	1.11	1.21	1.21	1.21	1.21	1.21	1.21
5	Cash and bank balance		3.42	6.19	9.37	12.47	16.08	20.11	24.15	29.24
	Total		12.17	13.78	15.81	17.65	20.00	22.77	25.55	29.39