	TEST- 1 (Solution)	

Answer to Question no.1

(a) (1) **Income Statement**

	Company X		Company Y	
	Present Situation	**20 % Increase in Sales**	**Present Situation**	**20 % Increase in Sales**
Sales (₹)	30,00,000	36,00,000	30,00,0000	36,00,000
(-) Variable Cost	(10,50,000)	(12,60,000)	(19,50,000)	(23,40,000)
Contribution	19,50,000	23,40,000	10,50,000	12,60,000
(-) Fixed Cost	(16,50,000)	(16,50,000)	(7,80,000)	(7,80,000)
Operating Profit (EBIT)	3,00,000	6,90,000	2,70,000	4,80,000
Increase in EBIT		3,90,000		2,10,000
% Increase in EBIT		130%		77.78%

(2) Degree of Operating Leverage (DOL)

$$= \frac{\% \text{ Change in EBIT}}{\% \text{ Change in Sales}}$$

Company X = $\frac{130\%}{20\%}$ = 6.5

Company Y = $\frac{77.78\%}{20\%}$ = 3.89

Alternatively,

$$DOL = \frac{\text{Existing Contribution}}{\text{Existing EBIT}}$$

Company X = $\frac{₹19,50,000}{₹3,00,000}$ = 6.5

Company Y = $\frac{₹10,50,000}{₹2,70,000}$ = 3.89

(3) In case of company X, DOL is 6.5 which implies that 1 % increase in sales will produce 6.5% increase in EBIT. In case of Company Y, DOL is 3.89 which implies that 1% increase in sales will produce 3.89 % increase in EBIT. We are given that future conditions are expected to be favourable implying that the companies may expect increase in demand in future. So I would like to purchase shares of company X in order to obtain the situation of more profitability.

(b) (i) Let us compute EPS of A Ltd. and B Ltd. in the following Manner :-

	A Ltd.	**B Ltd.**
Equity share capital (@ ₹ 10 per share)	₹ 5,00,000	₹ 2,50,000
9 % Debt Capital	Nil	₹ 2,50,000
Total Capital Employed	₹ 5,00,000	₹ 5,00,000
ROCE	20%	20%
EBIT (20% of Capital Employed)	₹ 1,00,000	₹ 1,00,000
(-) Interest	Nil	(22,500)
EBIT	1,00,000	77,500
(-) Tax @ 50%	(50,000)	(38,750)
EAT	50,000	25,000
No. of Equity Shares EPS	₹ 1	₹ 1.55

B Ltd. is correct in in holding the opinion that its EPS is more than A Ltd.

 (ii) Yes Capital Employed and ROCE are same but EPS of B Ltd. more than A Ltd. due to following reasons :-

(1) <u>Trading on Equity</u>: - 50% of total capital of B Ltd. is Debt financed @ 9% which is less than ROCE of 20%. Due to this, extra income arises in the hands of Equity shareholders of B Ltd.

On the other hand, A Ltd. is fully equity financed and there is no possibility of tacking and advantage in the name of "Trading on Equity"

(2) <u>Tax Saving</u>: - Interest on debt capital is regarded as on eligible expenditure while computing taxable income which leads to tax saving in the hands of B Ltd.

(3) Numbers of Equity Shares are 50,000 for A Ltd. and only 25,000 for B Ltd. Hence. EPS is bound to be more if Profit After Tax get distributed amongst lesser number of equity shares

Answer to Question no.2:

Calculation of Net Initial Cash Outflows	Amount (₹)
Cost of New Machine	10,00,000
Less: Sale proceeds of Existing Machine	(2,00,000)
Net Initial Cash Outflows	**8,00,000**

Calculation of annual depreciation

On Old Machine $= \dfrac{₹\,3,30,000}{11\,\text{years}} = ₹\,30,000\,\text{per annum}$

On New Machine $= \dfrac{₹\,10,00,000 - ₹\,40,000}{8\,\text{years}} = ₹\,1,20,000\,\text{per annum}$

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Calculation of annual cash inflows from operations:

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Particulars	Existing Machine	New Machine	Differential
Annual output	30,000 units	75,000 units	45,000 units
	Amount in (₹)	Amount in (₹)	Amount in (₹)
(A) Sales revenue @ ₹ 15 per unit	4,50,000	11,25,000	6,75,000
(B) (-) Cost of Operation			
Material @ ₹ 4 per unit	1,20,000	3,00,000	1,80,000
Labour - Old (3,000 x ₹ 40) ⎤	1,20,000		90,000
- New (3,000 ×₹ 70) ⎦		2,10,000	
Indirect cash cost	50,000	65,000	15,000
Depreciation	30,000	1,20,000	90,000
Total Cost (B)	**3,20,000**	**6,95,000**	**3,75,000**
Profit Before Tax (A) – (B)	1,30,000	4,30,000	3,00,000
Less: Tax @ 30%	(39,000)	(1,29,000)	(90,000)
Profit after tax	91,000	3,01,000	2,10,000
Add: Depreciation	30,000	1,20,000	90,000
Annual Cash Inflows	**1,21,000**	**4,21,000**	**3,00,000**

Calculation of Net present value:

Particulars	Years	Amount(₹)	PV @ 12%	Preset Value (₹)
Purchase of New Machine	0	(8,00,000)	1.000	(8,00,000)
Incremental Annual Cash Inflow	1 – 8	3,00,000	4.968	14,90,400
Salvage Value of New Machine	8	40,000	0.404	16,160
Net Present Value (NPV)				**7,06,560**

Hence, existing machine should be replaced because of NPV is positive.

Important Notes: -

1. Depreciation per year of old machine = ₹ 3,30,000/11 year = ₹ 30,000
    Book value of old machine after 3 years = 3, 30,000 – (30,000 × 3) = ₹ 2, 40,000.
    Market value of old machine = ₹ 2, 00,000. If old machine is sold, loss of sale of old machine will be ₹ 40,000.
2. Although purchase price of old machine is ₹ 10, 00,000 but ₹2, 00,000 can be arranged through sale of old machine. Ultimately initial cash outflow be ₹ 8, 00,000 (10, 00,000 - 2, 00,000).
3. Since, cost of capital is 12%, NPV should be calculated differently @ 12%.
4. Salvage value of ₹ 40,000 should be included in cash inflow of year 8.

Answer to Question no.3:

(1) Computation of Most Expected NPV:-

Project A = (15,000) (0.20) + (12,000) (0.30)
    + (6,000) (0.30) + (3,000) (0.20) $\Big\}$ ₹ 9,000

Project B = (15,000) (0.10) + (12,000) (0.40)
    + (6,000) (0.40) (3,000) (0.10) $\Big\}$ ₹ 9,000

(2) The parameter of risk can easily be evaluated with the help of standard Deviation, i.e., the permitted deviation from average (mean).

Standard Deviation = $\sqrt{\text{Variance}}$

Project A = $\sqrt{1,98,00,000}$ = ₹ 4,450

Project B = $\sqrt{1,44,00,000}$ = ₹ 3,795

Variance = $\sum (\text{Actual NPV} - \text{Expected NPV})^2 (\text{Probability})$

Project A = $(15,000 - 9,000)^2 (0.20) + (12,000 - 9,000)^2 (0.30)$
    $+ (6,000 - 9,000)^2 (0.30) + (3,000 - 9,000)^2 (0.20)$
    = 1, 98, 00,000

Project B = $(15,000 - 9,000)^2 (0.10) + (12,000 - 9,000)^2 (0.40)$
    $+ (6,000 - 9,000)^2 (0.40) (3,000 - 9,000)^2 (0.10)$
    = 1, 44, 00,000

(3) Profitability Index (PI) = $\dfrac{\text{PV of Cash Inflows}}{\text{Initial Cash Outflow}}$

Project A = $\dfrac{₹ 45,000}{₹ 36,000}$ = 1.25

Project B = $\dfrac{₹ 39,000}{₹ 30,000}$ = 1.30

PV of Cash Inflows = NPV + Initial Cash Outflows

Project A = 9,000 + 36,000 = ₹ 45,000

Project B 9,000 + 30,000 = ₹ 39,000

(4) Conclusion:- It is advised to make investment in Project B as its PI is more. Also one more advantage is associated with Project B, i.e., its risk factor (Standard Deviation) is also less.

Answer to Question no.4:

(a) Mercantilist Theory of International Trade

(i) **Origination: -** This theory was initially promoted by economic scholars of European countries and that is why, its impact is felt even today in these countries.

(ii) **National Power and Wealth :-** This theory is based upon the opinion that national power and wealth are best served by promoting exports and collecting gold and precious stones in return. In fact, the accumulation of is gold and precious stone can be regarded as basic parameter for deciding the richness of a particular country.

(iii) **Minimum Impact :-** This theory also emphasis the fact that is import is to be curtailed by imposing high level of import duties. Hence, the ultimate target to be achieved is "Maximum Export and Minimum Import".

(iv) **Conclusion: -** Although this theory has its own limitations, but it is still regarded as an important approach adopted by rich and powerful countries. This theory also advocates that international trade is a "Zero sum game" which means that one country's gain is equal to other country's loss so that net change in wealth is zero taken together.

(b) Yes, dumping is regarded as a serious problem in international trade. It occurs when the manufacturers decide to sell their goods at artificial law prices in the foreign countries. Suppose, an American company produces TV and sells in own Country @500$ but manages to sell some TV in Indian market @ ₹ 25,000 (If $ rate is ₹ 75 then ₹ 25,000 is equivalent to 333 $) then this situation is regarded as "Dumping".

Dumping leads to following consequences:-

(i) International Price discrimination.

(ii) Creating monopolies of some companies.

(iii) Harming the interests of domestic producers.

(iv) Promoting the consumption of foreign goods at undesirable levels.

Solutions: - In order to tackle the problem of dumping, the government may impose anti-dumping duty. The objective of anti-dumping duty is to make of price of domestic goods equal to foreign goods, i.e., the price is to be made equal irrespective of the fact that the product is sold in foreign country or domestic country. This way, all the adverse consequences will be addressed and reasonable protection will be granted to domestic manufacturing sector.

(c) **Emergence of WTO**:-

(i) WTO replaced GATT and it come into existence as a result of Uruguay Round of GATT.

(ii) WTO started functioning with effect from Jan. 1, 1995.

(iii) WTO controls and regulates international trade both in terms of industrial produce as well as the agricultural produce.

Objectives:-

(i) To facilitate free flow of goods among various nations in a smooth manner so that international trade become hassle-free.

(ii) To ensure equal importance to industrial goods as well as agricultural goods.

(iii) To protect Intellectual Property Rights (IPRs) of the world community.

(iv) To settle the disputes among the member countries.

(v) To facilitate the member countries for ascertaining and scoring market share in other countries.

At present, WTO is regulating 95% of total international trade and it has total 164 member nations out of which 117 are developing nations.

(d) Real Exchange Rate

= Nominal Exchange Rate X $\dfrac{\text{Domestic Price Index}}{\text{Foreign Price Index}}$

= ₹ 70 X $\dfrac{116}{112}$ = ₹ 72.50

Yes, it is true that ₹ 70 is to be sacrificed for obtaining 1$. But , currency is utilized for obtaining goods and services. So, real sacrifice of local currency is to be measured in context of goods or services which can be obtained through such currency. Hence, the exchange rate of ₹ 72.50, as computed above, implies that actual sacrifice is ₹ 72.50 for obtaining 1 $

Answer to Question no.5:

(a) Government is the big sender of money towards :-
   (i) Current expenditures to meet day-to-day requirements like payment of salary and other administration expenses.
   (ii) Capital Expenditures like infrastructure development.
   (iii) Transfer payments like old age pension, students grants etc.

Recession Period:- Dumping recession (or contraction), the government increase its spending towards construction of roads, irrigation facilities, ports, airports etc. it will provide various employment opportunities thereby leading to increase in income of public-at-large. The public will spend such additional income and the producers will be tempted to produce additional quantity in order to meet the extra demand generated in the economy. So, the economy will come-out of recession phase to an extent.

Inflation Period:- Dumping inflation (or expansion), the government reduces its spending by avoiding or deferring public works expenditures. It will lead to decrease in income of public-at-large leading to decrease in purchasing power. Hence, the aggregate Demand will fall and it will be helpful in absorbing the situation of inflation.

(b) In India, richest 1% owns 60% of total wealth and richest 10% owns 80% of total wealth. So, inequality is prevailing at very high level in India. Through Fiscal Policy, the government attempts to reduce such inequalities by adopting following measures:-

Progressive Direct Tax System:- In India, we have adopted progressive direct tax system in which the rich section of the society will contribute more amount towards the national exchequer. In other words, the rate of tax (Nil/Low/High) depends upon the level of income.

Differential Indirect Tax System:- Indirect tax (GST) system has been framed in such a manner that the goods and services which are consumed by rich section of society are subject to higher rates of taxes whereas the goods and services which are consumed by poor section of society are subject to lower or Nil rate of tax.

Other Measures:-
   (a) Free (subsidized) medical and education facilities.
   (b) Social security schemes like old age pension.
   (c) Poverty eradication programmes.
   (d) Subsidized production of goods which are meant for mass consumption.

(c) According to Richard Musgrave , in order to balance the situation of instability in the economy , the government has to perform following function:-

Allocation Function:- Here, the government makes honest efforts for justified allocation of resources for overall economic development.

Re-distribution Function:- Here, the government makes honest efforts for reducing the level of inequalities in income and wealth distribution. The government may introduce progressive direct tax system and differential indirect tax system in the country.

Stabilization Function:- Here, the government makes honest efforts for bringing full employment and avoiding the situation of price instability

(d) **Pollution Tax: -** It is a type of tax which is paid by consumers of those goods which are not environment friendly. It is type of green-tax due to the reason of non-green factors associated with some specific goods.

Example:- National Green Tribunal (NGT) has imposed Environment Compensation charge (ECC) on commercial vehicles.

One must agree to the fact that it is very difficult to ascertain the true amount of pollution tax to be charged. Also, there is no guarantee to the fact that the damage caused to the environment can be corrected by imposing "Pollution Tax".