Q-1 a)

AND : NET PRESENT VALUE:

 It is the method used to determine the current value of all future cash flows, generated by a project. It is the difference between present value of cash inflows and the present value of cash outflows over a period of time. NPV is used to analyze the profitability of a project investment.

EQUILENT ANNUAL COST :

 It Is the annual cost of owning, maintaining and operating an asset over its entire life. It is used for variety of purposes including capital budgeting. And it is also used to analyze two or more possible projects with different life spans, where costs are variable.

BENEFIT COST RATIO :

 It is a ratio used to summarize the overall relationship between the relative cost and benefit of a proposed project. It can be expressed in monetary or qualitative terms. Its benefit is that it shows the relationship between relative costs and benefits of proposed project. BCR is usually used to get a rough idea about the viability of a project and how much the IRR exceeds the discount rate.

Q-1 b)

Solution:

 Present Value Method :

1. Present value of benefit in 30 yrs

 = 1050,000,000\*[(1+0.5)\*30 -1/0.5(1+0.5)\*30]

 = 1050,000,000 (15.3)

 PUB = 16065000000

 ii) Present Value of Construction Cost :

 = 375,000,000 [(1+0.5)-1/0.5(1+0.5)\*30]

 = 375,000,000\*15.37

 = 576,375,0000 PKR

So,

 = 9000,000,000+576,3750000

 = 1.47\*10˄6 PKR

Iii) NET PRESENT VALUE :

 Present value of total benefits- Present value of total cost

B) Equilent annual cost

Annual Om Annual benefit = 357,000,000

Equilent annual cost of construction

= 1050,000,000(0.00505)

= 68302500+375,000,000

= 443302500

Ii) Net annual benefit = Total annual benefit- Total annual cost

Benefit Cost Ratio:

= Present worth of total benefit/Present worth of total cost

= 16214100000/14790750000

= 1.096

Q2 a)

INTERNAL RATE OF RETURN :

 IRR is used in capital budgeting to estimate the profitability of potential investments. It is a discount rate that makes the Net Present Value NPV of all cash flows from a particular project equal to zero. It is important for a business to look at the IRR as the plan for future growth and expansion.

DIFFERENCE BETWEEN IRR AND NPV:

 NPV is the present value of cash inflows over the cash value of outflows over a period of time. And with comparison the IRR is calculation used to estimate the profitability of potential investments.

 Under the NPV approach, the present value can be calculated by discounting a project future cash flow. However under the IRR cash flow is discounted at suitable rates using a trial and error method that equates to a present value. If IRR is the preferred method the discount rate is often not pre determined as the case with NPV.

In NPV the amount should be invested in a project in order to recover project earnings at current market rates from the invested amount.

On the other hand the IRR approach dosent took at the prevailing rate of interest on the market, and its purpose is to find the maximum rates of interest that wil encourage earnings to be made from the invested amount.

INFLATION:

 It is the rise in prices of goods of daily or common use food, clothing, transport , housing etc. It is measure of average price level of selected services in an economy, which increases over some period of time. It is also called as the sustained increase in the general price level of economy. Inflation is when most prices in an economy rises. The rate of inflation measures the annual percentage that change in the general price level. In other sense inflation means that ‘’your money won’t buy as much today as you could yesterday.

Q-2 b)

Solution:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| End of year | NCF | [1/(1+i)˄n] | DCF 1\*2 | [1/(1+i)˄n] | (DCF)˄131\*4 |
| 0 | -9000000 | 1.0000 | -9000000 | 1.00000 | -9000000 |
| 1 | 2100000 | 0.9259 | 1944390 | 0.8850 | 1720785.15 |
| 2 | 2700000 | 0.8573 | 2314710 | 0.7831 | 1812649.4 |
| 3 | 3450000 | 0.7938 | 2738610 | 06931 | 1898.13059 |
| 4 | 4200000 | 0.7350 | 3087000 | 0.633 | 1893257.1 |

 1084710 -1675177.76

 i = 8 percent [1084710/1084710+1675177.76]\*(13-8) percent

 i = 8 percent + [0.3930]\*(13-8) percent

 i = 8 percent +( 0.3930) \* (5)

 = 15.72

Q 3 :

SOLUTION:

 Contribution per unit expressed in percentage = [( P-v/p]\*100

 CPUD to cast iron pipes = 450,000-300,000/450,000]\*100

 CPUD to Steel pipes= [ 52500-375000/525000]\*100

 CPUD to concrete pipes = [600000-450000/600000]\*100

 = 33.3 percnt

 = 28.57 percnt

 = 25.00 percnt

 Cast iron pipes = 33.3 \*25 = 8.33 percnt

 Steel pipes = 28.57\*35 = 10.00 percnt

 Concrete pipes = 25.00\*40 = 10.00 percnt

 = 28.33 percnt

28.3 percent is the total contribution to overall sale rrupees

a) BEP = FC contribution = rs 200m/0.283 = Rs 706 m

706/900= 78.4 percnt operated by sub contractor

b) At 95 percent capacity

 Profit = TR-TC

 = ( 900m-95 percnt) –VC-FC

 = 855-810\*(1-0.283)-200

 PROFIT = 75 m ANSWER

Q 4:

SOLUTION :

 Scheme A

Equilent annual cost of installation and maintenance

= 120000\*[0.05(1+0.05)˄14/(1+0.05)˄14 -1]+20,000\*[0.05(1+0.05)˄30/(1+0.05)˄30 -1]+18000

= 120000\*0.1010+200000\*0.0651+18000= 43140ֆ

 SCHEME B

Equilent annual cost of installation and maintenance

= 190000\*[0.05(1+0.05)˄16 /(1+0.05)˄16 -1] + 160000\*[0.05(1+0.05)˄30 / (1+0.05)˄30-1]+16500

= ֆ44453

Scheme C

Equilent annual cost of installation and maintenance

= 285000\*[0.05(1+0.05)˄20 /(1+0.05)˄20 -1] + 100000\*[0.05(1+0.05)˄30 / (1+0.05)˄30-1]+16000

= 285000\*0.0802+100000\*0.0651+16000

= 45367ֆ