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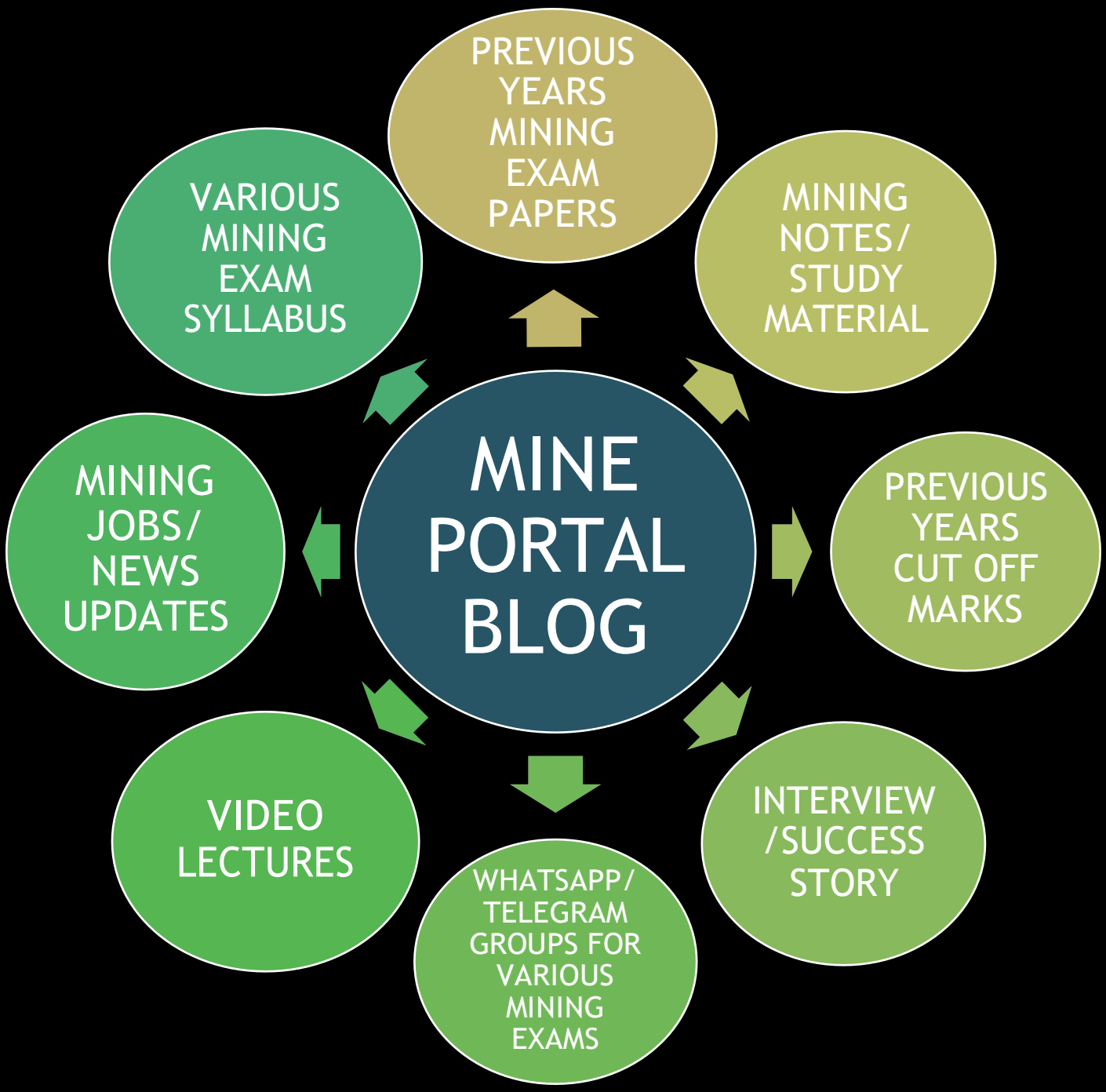

SEARCH ‘MINEPORTAL’ IN TELEGRAM TO JOIN VARIOUS MINING EXAM

Capital Budgeting

CAPITAL BUDGETING

Capital budgeting:

- The process of planning significant investments in projects that have long lives and affect more than one future period, such as the purchase of new equipment.

Cash Flows: Actual cash inflows received and actual cash outflows made for out-of-pocketcosts such as salaries, advertising, repairs and similar costs.

- Net cash flows are cash inflows less cash outflows.
- Net cash flows are not the same as operating income:
    - **Cash flow – depreciation expense = operating income**
    - **Operating income + depreciation expense = cash flow.**

Discounted Cash Flow Model

- Always considers the time value of money that makes this model superior to othermethods of evaluating capital projects.
- Two separate approaches to capital investment analysis:
- **Net Present Value method** and **Internal Rate of Return method.**
- **Net Present Value method** computes the difference between the present value of an investment project's future net cash flows and net initial cash outflows using a known discount rate.
- **Internal Rate of Return** solves for the discount rate which makes the net present value of aninvestment project's future net cash flows equal to net initial cash outflows, i.e., the internal rate of return sets the net present value = 0.
- The discounted cash flow model always uses cash flows, not operating income.
- Typically, the discount rate is based on the cost of capital, the average rate of return a company must pay to its long-term creditors and shareholders for the use of their funds.

Net Present Value Method

- Net Present Value method computes the difference between the present value of an investment project's future net cash flows and net initial cash outflows using a known discount rate.
- The net present value method always uses cash flows, not operating income.
- When projects require investments of significantly different amounts, the project profitability index is computed and used to compare various investment alternatives.
- Project profitability index is the ratio of the net present value of a project's future cashflows to the investment required.

$$NPV = \frac{R_t}{(1+i)^t}$$

t = time of the cash flow
i = discount rate
R_t = net cash flow

Internal Rate of Return Method

- Internal Rate of Return method computes the discount rate at which the difference between the present value of an investment project's future net cash flows and net initial cash outflows is 0,

i.e., the IRR is the discount rate that sets the NPV to 0.

- The internal rate of return method always uses cash flows, not operating income.
- The major limitation of the IRR is the assumption that cash inflows are reinvested at the IRR.

$$\text{IRR} = \frac{\text{(Cash flows)}}{(1+r)^i} - \text{Initial Investment}$$

Where:
Cash flows= Cash flows in the time period
r = Discount rate
i = Time period

Payback Method:

- Calculates the time period to recover the initial net investment through future cashflows.
- The method for determining the payback period differs whether the future cashflows are even (the same each period) or uneven (differ in one or more future periods.)
- Ignores the time value of money.

Payback Period= First Investment/ Annual Cash Flow

Simple (Accounting) Rate of Return:

- Computed using operating income (accounting income) rather than cash flow divided by the net initial investment.
- Ignores the time value of money.

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