

Institute of Actuaries of India

Subject SA5 – Finance

April 2016 Examinations

INDICATIVE SOLUTIONS

INTRODUCTION:

The indicative solutions provided are very detailed in nature for the benefit of students and the examiners are not expecting the students to provide such in-depth details under examination conditions. However the students are expected to cover all the fundamental principles to demonstrate their understanding of the subject.

Solution 1:

i)

a) *USA*

- The world's largest economy.
- Mature, self-sufficient in most commodities, wide spread of industries including a well-developed service sector.
- A large and prosperous population means that economies of scale are easily obtained.
- Politically and economically stable.
- Strong in IT and software development.
- There is some concern over the problems of large budget and trade deficits.
- Traditionally the dollar is considered to be the key foreign reserve currency, however, since 2001 the Euro has also served this purpose.
- The dollar was weak from around 2002, falling to around 2 (in 2008) against the pound, but has strengthened sharply (relative to the pound) following the financial crisis, and has continue strengthening recently.
- The Federal Reserve is fairly independent of political interference.
- Economic growth slowed following the credit crunch but due to an expansionary monetary and fiscal policies, has picked up strongly
- The political environment has undergone periods of uncertainty as the federal deficit has lead to political dispute and fears of a default.
- Very large stock market, with good marketability in most sectors.
- Equity prices were very high following the rises of 1995–1999, and despite the falls of 2000, 2001 and 2002 and again in 2007 and 2008, remain fairly fully valued with dividend yields slightly above 1.8%.
- Bond market is very large and liquid and is getting bigger each year as the deficit requires further debt issues.

[3]

b) *Japan*

- An industrial economy, totally dependent on import of raw materials.
- High expenditure on research and development and high capital investment.
- High level of exports with trade surplus despite strength of the currency.

- Savings ratios are still much higher than elsewhere in the world. The Japanese culture encourages hard work.
- Spending on infrastructure is high.
- Growth prospects in 2016/17 look reasonable and positive as a result of the ongoing Fiscal stimulus (large budget deficit).
- Interest rates remain very low.
- Very high government borrowing requirement of around 7% of GDP per year (which rose considerably in 2011 as a result of the tsunami) which has led to a very large stock of outstanding government debt – more than 220% of GDP in total.
- This has been caused by the government stimuli over the last two decades.
- Large, active stock and bond market.
- Bond market liquidity is aided by enormous (and ongoing as at 2015) quantitative easing programme.
- Stocks may appear highly priced with high PEs (by UK standards)

[3]

c) India – features of Indian economy and drivers that makes India an important market for Insurance and Banking

1. The Economy of India is the seventh largest in the world by nominal GDP and the third largest by purchasing power parity (PPP). The country is classified as a newly industrialised country, one of the G-20 major economies, a member of BRICS and a developing economy with an average growth rate of approximately 7% over the last two decades
2. The long-term growth prospective of the Indian economy is positive due to its young population, corresponding low dependency ratio, healthy savings and investment rates, and increasing integration into the global economy. The Indian economy has the potential to become the world's 3rd-largest economy by the next decade, and one of the largest economies by mid-century. The outlook for short-term growth is good as according to the IMF, the Indian economy is the "bright spot" in the global landscape. India also topped the World Bank's growth outlook for 2015-16 for the first time with the economy having grown 7.6% in 2015-16 and expected to grow 7.7-8.0% in 2016-17.
3. India has the one of fastest growing service sectors in the world with annual growth rate of above 9% since 2001, which contributed to 57% of GDP in 2012-13. India has become a major exporter of IT services, BPO services, and software services with \$167.0 billion worth of service exports in 2013-14. It is also the fastest-growing part of the economy.
4. The IT industry continues to be the largest private sector employer in India. India is also the fourth largest start-up hub in the world with over 3,100 technology start-ups in 2014-15. The agricultural sector is the largest employer in India's economy but contributes to a declining share of its GDP (17% in 2013-14). India ranks second worldwide in farm output. The Industry sector has held a constant share of its economic contribution (26% of GDP in 2013-14).The Indian auto mobile industry is one of the largest in the world with an annual production of 21.48 million vehicles (mostly two and three wheelers) in FY 2013-14. India has \$600 billion worth of retail market in 2015 and one of world's fastest growing E-Commerce markets

5. The potential growth of the banking sector stems from the fact that only 15 percent of the population has ever borrowed from banks, and more than 40 percent do not even have bank accounts. Continued urbanization and rising middle-class incomes are the other indicators of the long-term potential of banks.
6. The large insurable population exceeding 550 million is an important consideration in determining the attractiveness of insurance sector. India's insurance market could grow 400 percent in the next 10 years from its current size of 60,000 crore rupees. India's life insurance sector is one of the largest in the world, with an approximate 40-percent growth rate based on new business premium collections. The number of policies is expected to grow at a 12-to-15-percent CAGR (compound annual growth rate) in the next decade. With the penetration level expected to reach 5 percent from the present level of 3.9 percent in the next five years, the total market size could reach the one-trillion-USD mark within seven to nine years. Penetration of life insurance (based on a premium-to-GDP ratio) has remained at 3.5 to 3.9 percent of GDP in India, compared to 11 percent in Japan and 9 percent in the developed world. A projected growth rate of 7 to 8 percent in GDP means a huge rise in demand for insurance products, considering the rise in life expectancy and income levels of the upper-middle and middle class populations with fast-changing lifestyles

[6]

ii) Different methods available for Googly to invest in the Banking and Insurance Sector in India are as follows:

1. Googly can increase its equity share percentage from 26% to 49% if not already done in its insurance venture – both for Life and general insurance
2. Googly can look at acquiring another company operating in India subject to the restriction mandated by IRDA and SEBI
3. Googly can raise its equity capital in its banking subsidiary and use that money to expand into banking operations
4. Googly can invest in other private /public sector banks subject to limits approved by RBI
5. Googly can partner with an existing Indian non-banking financial intermediary or with a non-financial Indian company to set up joint venture companies in banking and insurance with equity participation subject to the caps prescribed by the relevant regulatory frameworks

[5]

iii)

Basel III proposes various new ideas that have been added in addition to a general tightening of the capital requirement for banks globally. Basel III does not, for the most part, supersede the guidelines known as Basel I and Basel II; rather, it will work alongside them. The most important are:

- The introduction of Leverage ratio that limits the amount of loans a bank can make based on a certain amount of capital, even if those loans do not attract a high-risk weighting.
- Liquidity Coverage Ratio which aims to tackle liquidity risk by ensuring that banks have sufficient liquid assets to secure their outflows over the coming 30 days. Banks will have to ensure that they can cover these outflows with cash inflows or with highly secure and marketable securities that have proven to be easily saleable in difficult markets. Assets that qualify are referred to as High Quality Liquid Assets (HQLA)
- The Net Stable Funding Ratio that ensures sufficient resources to manage claims more than one year in maturity.
- Basel III introduced two additional capital buffers:
 - A mandatory "capital conservation buffer", equivalent to 2.5% of risk-weighted assets. Considering the 4.5% CET1 (common Equity Tier 1) capital ratio required, banks have to hold a total of 7% CET1 capital, from 2019 onwards.
 - A "discretionary counter-cyclical buffer", allowing national regulators to require up to an additional 2.5% of capital during periods of high credit growth. The level of this buffer ranges between 0% and 2.5% of RWA and must be met by CET1 capital

[6]

iv)

Banks are already seeking to manage ROE in the new environment by cutting costs and adjusting prices. There are, however, a number of additional interventions, both general and specific to Basel III, that banks should consider:

—A set of “no regret” interventions to reduce capital and liquidity inefficiency from suboptimal implementation of the new rules

—Balance-sheet restructuring to improve the quality of capital and reduce capital needs arising from Basel III’s deductions, as well as more effective management of scarce balance-sheet resources

—Business-model adjustments to create capital- and liquidity-efficient business models and products and rethink the scope and even the viability of specific business lines

The changes can be summarized in the following manner:

1. **Increased quality of capital** - Banks will have to restructure their balance sheets. This constitutes a major lever since it can alleviate capital quality and deduction issues, and optimize the funding.
2. **Increased quantity of capital** –
 - a. Increased RWAs will put pressure on margins across all segments. Banking segments such as retail banking, corporate banking, and investment banking will be affected in

different ways Corporate banking, for instance, will be affected primarily by the increased capital target ratios. The new ratios will also impact many standard corporate banking products: long-term corporate loans and asset-based finance businesses (commercial real estate, project finance) will face an increased funding cost of about 10 basis points. The higher costs will lead to a reduction in profitability.

b. Banks will face a significant additional capital requirement, and the bulk of this shortfall will need to be raised as common equity or otherwise by retaining dividends.

3. Reduced leverage through introduction of backstop leverage ratio –

a. The introduction of the leverage ratio could lead to reduced lending and is a clear incentive to banks to strengthen their capital position, although it remains to be seen whether the ratio will bite for individual firms.

b. The non-risk-adjusted measure could incentivize banks to focus on higher-risk/higher-return lending.

c. Pressure arises on banks to sell low margin assets (e.g., mortgages), which could drive down prices on these assets.

d. Banks may be required by the market and the rating agencies to maintain a higher leverage ratio than required by the regulator.

4. Increased short term liquidity coverage –

e. The Risk of impact from a bank run should be reduced, which would improve the overall stability of the financial sector.

f. The introduction of the LCR will require banks to hold significantly more liquid, low-yielding assets to meet the LCR, which will have a negative impact on profitability.

g. Banks will change their funding profile, which will lead to more demand for longer-term funding. This funding may not be available from institutional investors that generally seek to reduce their holdings in the financial sector.

h. Banks also have to develop a more accurate view of their liquidity position via an integrated dashboard, including cash-flow forecasts, maturity ladders, portfolio analysis, funding diversification information, and stress tests.

5. Strengthened risk capture, notably counterparty risk –

Banks and financial institutions need to estimate the Counter party risk (CPR) .On the other hand, modeling CPR becomes extremely complex given that they do not know the identity and exposures of the other institutions dealing with the Counter party. Controls and quality of the Counter party risk management is critical as risk is focused on central bodies. Reduce level of intra-financial sector business arising from increased capital charges intra-sector. Costs of dealing with financial counterparties need to be priced into the business, leading to a review of the business model.

There are major challenges when estimating the underlying joint market and credit risk factor processes driving counterparty losses and in particular for modeling accurately the codependence between exposures and defaults

[7]

v)

The Insurance Regulatory and Development Authority Act, 1999 has set a minimum capital for direct insurance companies (life and non-life) of 1b INR and 2b INR for locally licensed professional reinsurers.

In accordance with the provisions of the *1999 Act*, which amended the *Insurance Act 1938*, the “required solvency margin” (RSM) shall be the maximum of the following amounts:

- a) 500m INR for direct non-life insurers, (1b INR for reinsurers), or
- b) a sum equivalent to 20% of net premium income, or
- c) a sum equivalent to 30% of net incurred claims

For item b) the computation of the net premium income is based on the higher of the Gross Premiums multiplied by a Factor and Net Premiums. The Factor is the credit for reinsurance determined by regulations, ranging from 50% to 90% for different classes of business.

For item c) the computation of the net incurred claims is based on the higher of the Gross Direct and Inwards Reinsurance Incurred Claims multiplied by a Factor and Net Incurred Claims. The Factor is the credit for reinsurance determined by regulations, ranging from 50% to 90% for different classes of business.

Insurers are also required to compute the Available Solvency Margin (ASM), which is made up of the excess in policyholders’ funds and excess in shareholders’ funds.

The solvency margin ratio is then computed (ASM/RSM). The IRDA has proposed a lower solvency margin for insurers, at 1.45 from current 1.5, after including a risk charge, applicable from financial year 2013-2014.

The current solvency margin requirements applicable to the Indian Life Insurance Companies can be summarized as follows :

- The required solvency margin requirement can be expressed in terms of the following formula :

$RSM = K1 * \text{Mathematical Reserves} + K2 * \text{Sum at Risk} + K3 * \text{Value of Specified Assets}$

Where K1 is a factor which varies between 0.8% to 3% based on the type of the life insurance contract/ rider

K2 is a factor which varies between 0.1% to 0.3%

And K3 is a factor which is currently set at Zero by IRDA

- If the above formula results in a Required Solvency Margin which is less than Rs.50 crores [Rs.100 crores in the case of reinsurers] then the minimum RSM is set equal to Rs 50 crores [or Rs.100 crores in the case of reinsurers].
- While calculating the RSM using the above formula, credit is provided for the use of the reinsurance subject to specified caps.
- The RSM is linked to the ASM [Available Solvency Margin] through the Solvency Ratio which is defined as ASM divided by RSM. Currently the Solvency Ratio needs to be greater than or equal to 1.5

[3]

vi)

Economic Capital Requirements Mandated by IRDA:

- The economic capital requirements mandated by the IRDA is broadly modelled on the framework for calculating solvency capital requirement (SCR) under Pillar I of the Solvency II framework.
- The types of risk to be considered (for calculating the economic capital requirement) are broadly grouped under three categories
 - Underwriting Risks
 - Reserve Risk
 - Premium Risk
 - Catastrophe Risk
 - Market Risk
 - Interest Rate Risk
 - Currency Risk
 - Equity Risk
 - Other Market Risks
 - Credit Risk
 - Other Risks
 - Expense Risk
 - Operational Risk
 - Liquidity Risk

- The quantification methodology is a formula-based approach for calculating 99.5% VaR of the net owned funds over a time period of one year. The use of internal models for calculating economic capital is not allowed.
- The statistical correlations between the different types of risk for example, between premium risk and reserve risk are specified in the circular issued by IRDA

[5]

vii)

- EC model proposed by India build on QIS 5 studies before implementing Solvency II. There is no flexibility/benefit to have own internal model which reflects the nature , scale and complexity of the business
- Regulatory Capital continue to be factor based model as earlier and the regulatory capital is not diluted by Economic capital framework
- Solvency II puts emphasis on Own risk solvency testing and embedding EC model in all business decisions.
- Solvency II harmonizes regulatory reporting requirement across EU and there is nothing proposed currently in EC framework in IRDA
- Solvency II proposed data quality, calibration and documentation requirements and standards
- There is encouragement to think of other risk like Operational risk in Solvency II

[4]

viii)**Insurance Company**

- Suggested approach does not account for Goodwill or the value that is generated from future new business .In valuing Insurance business , we need to use metrics of Appraisal value which is Goodwill + EV
- In a growth market there is a price that is paid towards licensing and setting up expenses of an Insurance company
- Without knowing the reasons for which a multiple of EV is paid , it is difficult to determine if the deal is cheap or expensive

Banks

- Growth expected in the developing market
- Ease of setting up Bank in India has to factored in
- Quality of asset book
- Adjustments made to Book Value

[6]

ix)

Reasons are as follows:

1. Higher assumption made on the growth of future new business
2. Super normal profits are expected to reduce because of increased competition and regulatory intervention
3. Regulatory compliance cost is expected to go up
4. Claim settlement – severity or frequency or both – is expected to go up because of increased awareness of rights in Liability market
5. New rules are expected to make it easy to set up Bank or Insurance company
6. Industry loan default rates are expected to go up

All these above factors, as per Equity Analyst will depress future profits and hence the price paid may appear to be high.

[3]

x)

A negative interest rate policy (NIRP) is an unconventional monetary policy tool whereby nominal target interest rates are set with a negative value, below the theoretical lower bound of zero percent.

During deflationary periods, people and businesses hoard money instead of spending and investing. The result is a collapse in aggregate demand that leads to prices falling even farther, a slowdown or halt in real production and output, and an increase in unemployment. An expansionary monetary policy is usually employed to deal with such economic stagnation. However, if deflationary forces are strong enough, then by cutting the central bank's interest rate to zero may not be sufficient to stimulate borrowing and lending.

A negative interest rate means the central bank and perhaps private banks will charge negative interest: instead of receiving money on deposits, depositors must pay regularly to keep their money with the bank. This is intended to incentivize banks to lend money more freely and businesses and individuals to invest, lend, and spend money rather than pay a fee to keep it safe. Therefore the purpose of negative rates is to encourage spending and discourage saving.

The central banks of Denmark, Sweden, and Switzerland, have implemented negative rates primarily to reduce upward pressure on their exchange rates. Their economies are closely interconnected with the euro area, and their securities are close substitutes for euro area securities. If their interest rates were higher than in the euro area, it would attract large capital flows into their economies, thus putting upward pressure on the value of their currencies (which, in Denmark's case, could break its peg with the euro). Fearing that a stronger currency would adversely affect their exporters and import-competing firms, these countries have implemented negative interest rates to discourage foreign capital inflows that would boost the currency. Thus, negative rates also stimulate spending by putting downward pressure on exchange rates, although that has not happened in Japan.

[5]

xi)

1. Negative rates raise banks' operating costs. If those costs cannot be passed on to customers, they would reduce bank profitability. So far, banks in countries with negative rates have not charged their retail depositors negative rates.
2. If negative rates spread to safe, short-term securities, money market funds (MMFs) would be unable to maintain a stable net asset value. Since MMFs are close substitutes to bank deposits, it is unclear whether MMFs would still be attractive to investors in that scenario.
3. Negative rates could raise unpredictable logistical issues. For example, the existing valuation and settlement systems of the banks for settling financial contracts might not envision a scenario where the lender would have to pay the borrower. Effecting appropriate modifications to the current accounting, valuations and settlement systems will entail additional investment costs which can put a further downward pressure on the profitability of the banks and reduce the available loanable funds

1. As a consequence of the changes made to the current valuation and settlement systems, the bank's exposure to operational risk can increase which in turn may increase the regulatory capital requirement.
2. Market participants would have the incentive to take actions just to avoid negative interest rates, such as increasing cash holdings, prepaying bills, or delaying receipt of payments. These actions can adversely impact the deposit levels of the bank.

[4]

[60 Marks]

Solution 2:

i)

- The MM (Modigliani and Miller) proposition states that a firm's market valuation is independent of its structure.
- MM's proposition is that "the value of a firm is equal to its expected operating income divided by the discount rate appropriate to its risk class. In other words, the value of the firm is independent of its capital structure".
- In symbols this proposition can be expressed as

$$V = D + E = O / r$$
 Where
 V is the market value of the firm
 D is the market of debt
 E is the market value of equity
 O is the expected operating income
 And r is the discount rate applicable to the risk class to which this firm belongs.
- MM invoked an arbitrage argument to prove this proposition. In equilibrium identical assets must sell for the same price irrespective of how they are financed. Put differently

no matter how a set of cash flows is packaged, its value will remain unchanged. Hence the MM proposition is also referred to as the law of conservation of value.

- The key assumptions underlying MM proposition are as follows:
 - Perfect Capital Market: Information is freely available and there is no problem of information asymmetry. There are no transaction costs. There are no bankruptcy costs. Securities are infinitely divisible.
 - The investors rationally choose a combination of risk and return that is most advantageous to them. Managers act in the interest of the shareholders.
 - Investors hold identical expectations about future operating earnings.
 - There is no tax
 - Firms can be grouped into “equivalent risk class” on the basis of their business risk.

[5]

ii) Taxes as debt gives a tax break

Imperfect information

High debt may be seen as more risky and the lenders may impose stiff conditions

Suppliers etc may not give better terms

Administrative complications

Reduction in freedom of operation due to various covenants

[3]

iii)

- PPP (Public – Private Partnership) is a blanket term covering a range of relationships formed between the public sector and the private sector. Examples of these relationships are the Private Finance Initiative (PFI), Part Privatisation, Concessions and Franchises and Wider Markets Initiative.
- The aim of PPP is to help the public sector to achieve improved value-for-money by using the resources and/or the expertise of the private sector in developing and/or running public sector projects.
- The key features of PPP are:
 - A good and sustained competitive process for awarding contracts, in order to ensure that the public sector secures the best available deal
 - The encouragement of creativity and innovation (on the part of the private sector) in order to reduce costs and/or deliver an asset which is better in terms of providing a scheme’s ongoing service requirements
 - Payment is made (to the private sector partner) for services rather than assets, so that there is a strong incentive for the private sector partner to get on with the job and ensure “fitness of purpose” over the whole life of the contract.
 - Creation of a single private sector contact point to simplify contract management and problem resolution.

- Transfer to the private sector of those risks which it can manage better than the public sector. Examples are construction risks (in terms of time and cost overruns) and design risk.

[4]

iv)

- The projection of traffic in terms of no. passenger car units for the next 30 years
- The past history of traffic
- Economic data in the region
- The land acquisition process/ who will be responsible for the acquisition
- Compensation to be paid
- Agricultural/forest areas and any laws prohibiting the acquisition of lands
- Tax concessions
- The projection of industrial development, any major industries in that area
- Development any townships
- If the road is going thru different states, any state laws to be complied with
- Risks to the project
- The desired return on capital by the company
- Current return on capital and any other alternate projects
- The certainty of future cash flows

[6]

v)

The key risks to the project include:

- Acquisition of land and payment of appropriate compensation - Need government help to acquire the land. The project start day to be after acquiring the land
 - Inadequate traffic due to faulty projections - minimum guaranteed cash flows each year for at least first 3 to 5 years of the project
 - Change in tax laws - to put adequate clauses in the project to protect against any of these changes during the minimum assured period
 - Delays in getting all the regulatory approvals which may lead to cost escalations – provision in the contract for cost escalations where the fault is that of company
 - Failure to arrange finances in time and deliver the project in time – a complete assessment of availability of finances and how to achieve financial closure
 - Inadequate resources both in terms of management/workforce/raw materials etc. – given its experience in the execution of similar projects in the past, the company should be in a position to put in place a complete risk metrics, the resource planning and tying up material /labour supply
- Applying the RAMP Framework for Assessing and managing the project risks:
- RAMP (Risk Analysis and Management for Projects) is a comprehensive and systematic process for identifying, evaluating and managing the risks inherent in capital investment projects. This process covers the entire life of a project and can be broken down in terms of four key activities

- Process launch
- Risk review
- Risk management
- Process close down

- Process launch
 - The first step is to have a team (an individual or group) in place to plan, lead and implement the RAMP process.
 - The “baseline” objectives, scope and plans of the project including the underlying assumptions are defined and documented for example, the rate of return required on the bid price (hurdle rate of 16% pa proposed by the CFO)
 - The principal stakeholders are identified which will include the major shareholders, the government, other joint venture partners (if any), bankers and other lenders, insurers and the contractors.
 - The strategy for risk reviews is also defined in terms of
 - Objectives of the RAMP Process
 - Level of risk analysis to be carried out
 - Scope and timing of risk reviews
 - Budget for RAMP

- Risk Review
 - This activity involves
 - Identifying key risks (as described in the preceding question in the context of this project)
 - Entering the key risks in the risk register
 - Evaluating these risk in terms of their likelihood, impact and inter relationships between this risks.

- Using an investment model (either deterministic or stochastic) and parameter estimates, the overall impact of these risks on the whole – life NPV of the project needs to be determined. Since the results of the investment model will be highly dependent upon the chose parameter values, sensitivity analysis and scenario testing for alternative values of the key parameters needs to be carried out.

- Risk Management
 - Following the risk review, it is important to develop a risk mitigation plan which aims at replacing an uncertain and volatile streams of future cash flows with a cash flow stream with less exposure to adverse risks
 - The four key ways of mitigating risks are
 - Reduce (or elimination)
 - Transfer
 - Avoidance
 - Absorption or Pooling

- Risk mitigation will involve costs which will reduce the overall financial returns from the project. However sometimes it is possible to achieve risk efficiency which means that it is possible to increase both the NPV and reduce the risk.
- Risk management, which is conducted between risk reviews, involves implementing the risk mitigation strategy and the risk response plan.
- The risk response plan aims to minimise the probability of the occurrence of risks which cannot be avoided, reduced or transferred. The risk response plan also aims to contain the impact of these residual risks by developing contingency plans to deal with specific residual risks and for each “trigger” event.
- Process Close Down:
 - This activity involves a retrospective review of the project in terms of its success in meeting the objectives and also an assessment of the effectiveness of the RAMP process which was carried out.
 - The objective of the process close down phase is to facilitate better appraisal and management of future projects.

[10]

vi)

- 100% equity funding from the existing shareholders
- 100% debt funding
- A combination
- Enhancing the equity base by inviting strategic investors for equity portion
- Securitising the future earnings from the project

Equity funding:

Advantages:

- It indicates the confidence of shareholders in the project and a reflection of the current management’s capacity to execute the project profitably and the ability to earn the
- Improves the current debt : equity ratio which would help them get better terms from lenders for future projects or renegotiate the existing loans
- No covenants & less hassles of administration of debt

Disadvantages:

- The ability of existing shareholders to contribute to the capital if it is a rights issue
- If equity funding is obtained through induction of a strategic investor then there may be conditions for such funding & the existing shareholders may not agree to those conditions

- All the risks have to be borne by the shareholders and there is no guarantee that the hurdle rate of return is achieved on the enhanced capital base
- The tax benefits available with debt may not be availed of thus may increase tax outgo
- If the project cash flows do not happen as expected, the dividend payouts may be impacted
- WACC would go up

Debt Funding:

Advantages:

- Availability of tax benefits on the interest payouts thus reducing the WACC
- The debt may be available at lower interest rates than the hurdle rate which would help improve the WACC
- When lenders agree to fund, they will do their due diligence which would increase confidence in the project.
- If the debt is secured either through current assets or thru assigning of future earnings, the lending rate could be more attractive thus improving the returns for the shareholders

Disadvantages:

- The debt equity ratio may deteriorate to 4:1 which may be perceived as high gearing thus leading to higher risk & hence higher interest rates
- The lenders may put large number of restrictive covenants due to the perceived risk
- If the projected receipts do not materialise, there may be stress on finances and hence may face risk of default/ downgrade
- In case of such financial difficulties, it may be difficult to raise equity/ further debt
- It may lead to lenders taking over the project or proceeding with bankruptcy

Overall recommendation:

In order to maintain a reasonable gearing and provide confidence to lenders in terms of shareholder commitment, a combination of debt & equity would be a better option. The proportion could be such that the current gearing is maintained. This will also help the company get better rates.

[12]

[40 Marks]
