Professional Level – Options Module

Advanced Performance Management

September/December 2016 – Sample Questions

Paper P5

Time allowed: 3 hours 15 minutes

This question paper is divided into two sections:

Section A – This ONE question is compulsory and MUST be attempted

Section B – TWO questions ONLY to be attempted

Present Value and Annuity Tables are on pages 12 and 13.

Do NOT open this question paper until instructed by the supervisor.

This question paper must not be removed from the examination hall.

Think Ahead

ACCA

The Association of Chartered Certified Accountants

Section A – This ONE question is compulsory and MUST be attempted

1 Monza Pharma (Monza) is a developer and manufacturer of medical drugs, based in Beeland but selling its products all over the world. As a listed company, the overall objective of the company is to maximise the return to shareholders and it has used return on capital employed (ROCE) as its performance measure for this objective. There has often been comment at board meetings that it is good to have one, easily-understood measure for consideration.

The company has three divisions:

- the drug development division develops new drug compounds, taking these through the regulatory systems of different countries until they are approved for sale;
- the manufacturing division then makes these compounds;
- the sales division then sells them.

Monza's share price has underperformed compared to the market and the health sector in the last two years. The chief executive officer (CEO) has identified that its current performance measures are too narrow and is implementing a balanced scorecard (BSC) approach to address this problem. The current performance measures are:

- Return on capital employed
- Average cost to develop a new drug
- Revenue growth

The CEO engaged a well-known consulting firm who recommended the use of a BSC. The consultants began by agreeing with the board of Monza that the objective for the organisation's medium-term strategy was as follows:

- Create shareholder value by:

  Innovating in drug development
  Efficiency in drug manufacturing
  Success in selling their products

The consulting firm has presented an interim report with the following proposed performance measures:

– Financial:	ROCE
– Customer:	Revenue growth
– Internal business process:	Average cost to develop a new drug
– Learning and growth:	Training days provided for employees each year

The CEO and the lead consultant have had a disagreement about the quality and cost of this work and as a result the consultants have been dismissed. The CEO has commented that the proposed measures lack insight into the business and do not appear to tackle issues at strategic, tactical and operational levels.

The CEO has decided to take this work in-house and has asked you as the performance management expert in the finance department to assist him by writing a report to the board to cover a number of areas. First, following the disagreement with the consultants, the CEO is worried that the consultants may not have been clear about the problems of using the BSC in their rush to persuade Monza to use their services.

Second, he wants you to evaluate the choice of performance measures currently used by Monza and those proposed by the consulting firm.

Third, there has been a debate at board level about how ROCE should be calculated. The marketing director stated that she was not sure what profit figure (of at least four which were available) should be used and why, especially given the large variation in result which this gives. She also wondered what the effect would be of using equity rather than all capital to calculate a return on investment. Some basic data has been provided in Appendix 1 to assist you in quantifying and evaluating these possibilities.

In addition to these concerns, the board is considering introducing a total quality management approach within Monza. Obviously, quality of output is critical in such a heavily regulated industry where the products can be a matter of life and death. There has been discussion about testing this idea within the manufacturing division. The CEO wants to understand, first, the costs associated with quality issues within that division. To aid your analysis, he has supplied some detailed information in Appendix 2. Next, the board requires an outline evaluation of how a total quality management (TQM) approach would fit within the manufacturing division.

Finally, the drug development divisional managers have been lobbying for a new information system which will assist their research chemists in identifying new drug compounds for testing. The new system will need to be capable of performing calculations and simulations which require high computational power and memory but will also need to have access to external data sources so that these scientists can keep up with developments in the field and identify new opportunities. The CEO is worried about the cost of such a new system and wants to know how it would fit within the existing lean management approach within that division.

Required:

Write a report to the board of Monza to:

(i) Assess the problems of using a balanced scorecard at Monza. (8 marks)

(ii) Evaluate the choice of the current performance measures and the consulting firm's proposed performance measures for Monza. (12 marks)

(iii) Evaluate the effect of choosing different profit and capital measurements for different measures of return on investment and recommend a suitable approach for Monza. (11 marks)

(iv) Analyse the current quality costs in the manufacturing division and then briefly discuss how implementation of total quality management would affect the division. (10 marks)

(v) Briefly advise on how the drug development division can aim to make the new information system 'lean'. (5 marks)

Professional marks will be awarded for the format, style and structure of the discussion of your answer. (4 marks)

(50 marks)

Appendix 1

Financial data for Monza for the most recent accounting period

	$m
Revenue	8,001
Costs	2,460
Gross profit	5,541
Other costs	3,248
Restructuring costs	482
Operating profit	1,811
Finance costs	266
Profit before tax	1,545
Tax	419
Profit after tax	1,126

Capital structure from the statement of financial position

Shareholders' equity	1,161
Long-term debt	8,739

Note: Restructuring costs relate to a major project which completed during the period.

Appendix 2

Cost information for the manufacturing division for the most recent accounting period

1. Batches rejected at factory valued at $17m which have a scrap value of $4m.
2. Training of factory staff which cost $8m.
3. Regulatory fines costing $5m (due to drug compounds being outside the specified range of mix of chemical ingredients).
4. Discounts given following customer complaints due to late delivery costing $22m.
5. Factory product testing department cost $12m.
6. Cost of raw materials was $1,008m.

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Question 2 begins on page 6.

Section B – TWO questions ONLY to be attempted

2 Framiltone is a food manufacturer based in Ceeland, whose objective is to maximise shareholder wealth. Framiltone has two divisions: Dairy division and Luxury division. Framiltone began manufacturing dairy foods 20 years ago and Dairy division, representing 60% of total revenue, is still the larger of Framiltone's two divisions.

Dairy division

This division manufactures cheeses and milk-based desserts. The market in Ceeland for these products is saturated, with little opportunity for growth. Dairy division has, however, agreed profitable fixed price agreements to supply all the major supermarket chains in Ceeland for the next three years. The division has also agreed long-term fixed volume and price contracts with suppliers of milk, which is by far the most significant raw material used by the division.

In contrast to Luxury division, Dairy division does not operate its own fleet of delivery vehicles, but instead subcontracts this to a third party distribution company. The terms of the contract provide that the distribution company can pass on some increases in fuel costs to Framiltone. These increases are capped at 0·5% annually and are agreed prior to the finalisation of each year's budget.

Production volumes have shown less than 0·5% growth over the last five years. Dairy division managers have invested in modern production plant and its production is known to be the most efficient and consistent in the industry.

Luxury division

This division was set up two years ago to provide an opportunity for growth which is absent from the dairy foods sector. Luxury division produces high quality foods using unusual, rare and expensive ingredients, many of which are imported from neighbouring Veeland. The product range changes frequently according to consumer tastes and the availability and price of ingredients. All Luxury division's products are distributed using its own fleet of delivery vehicles.

Since the company began, Framiltone has used a traditional incremental budgeting process. Annual budgets for each division are set by the company's head office after some consultation with divisional managers, who currently have little experience of setting their own budgets. Performance of each division, and of divisional managers, is appraised against these budgets. For many years, Framiltone managed to achieve the budgets set, but last year managers at Luxury division complained that they were unable to achieve their budget due to factors beyond their control. A wet growing season in Veeland had reduced the harvest of key ingredients in Luxury's products, significantly increasing their cost. As a result, revenue and gross margins fell sharply and the division failed to achieve its operating profit target for the year.

Framiltone has just appointed a new CEO at the end of Q1 of the current year. He has called you as a performance management expert for your advice.

'In my last job in the retail fashion industry, we used rolling budgets, where the annual budget was updated to reflect the results of every quarter's trading. That gives a more realistic target, providing a better basis on which to appraise divisional performance. Do you think we should use a similar system for all divisions at Framiltone?', he asked.

You have obtained the current year budget for Luxury division and the division's Q1 actual trading results (Appendix 1) and notes outlining expectations of divisional key costs and revenues for the rest of the year (Appendix 2).

Appendix 1

Luxury division current year budget

C$'000	Q1	Q2	Q3	Q4	Total	Q1 Actual
Revenue	10,000	12,000	11,000	7,000	40,000	10,400
Cost of sales	(6,100)	(7,120)	(6,460)	(4,720)	(24,400)	(6,240)
Gross profit	3,900	4,880	4,540	2,280	15,600	4,160
Distribution costs	(600)	(720)	(660)	(420)	(2,400)	(624)
Administration costs	(2,300)	(2,300)	(2,300)	(2,300)	(9,200)	(2,296)
Operating profit	1,000	1,860	1,580	(440)	4,000	1,240

Appendix 2

Expected key costs and revenues for remainder of the current year

1. Sales volumes are expected to be 2% higher each quarter than forecast in the current budget.
2. Average selling price per unit is expected to increase by 1·5% from the beginning of Q3.
3. The exchange rate between the Ceeland Dollar (C$) and the Veeland Dollar (V$) is predicted to change at the beginning of Q2 to C$1·00 buys V$1·50. For several years up to the end of Q1, C$1·00 has been equivalent to V$1·40 and this exchange rate has been used when producing the current year budget. Food produced in the Luxury division is despatched immediately upon production and Framiltone holds minimal inventory. The cost of ingredients imported from Veeland represents 50% of the division's cost of sales and suppliers invoice goods in V$.
4. The rate of tax levied by the Ceeland government on the cost of fuel which Luxury uses to power its fleet of delivery vehicles is due to increase from 60%, which it has been for many years, to 63% at the beginning of quarter 3. 70% of the division's distribution costs are represented by the cost of fuel for delivery vehicles.
5. The CEO has initiated a programme of overhead cost reductions and savings of 2·5% from the budgeted administration costs are expected from the beginning of Q2. Q3 administration costs are expected to be a further 2·5% lower than in Q2, with a further 2·5% saving in Q4 over the Q3 costs.

Required:

(a) Using the data in the appendices, recalculate the current year budget to the end of the current year and briefly comment on the overall impact of this on the expected operating profit for the year. (12 marks)

(b) Evaluate whether a move from traditional incremental budgeting to a system of rolling budgets would be appropriate for Dairy and Luxury divisions. (13 marks)

(25 marks)

3 Alflonnso is a large producer of industrial chemicals, with divisions in 25 countries. The agrochemicals division produces a chemical pesticide, known internally as 'ALF', to control pests in a crop which is of worldwide significance, economically and for food production. Pesticides such as ALF only remain effective for a limited time, after which pests become resistant to them and a replacement product needs to be found. A scientific study has shown that the current variant, ALF6, is becoming ineffective in controlling pests and in some places, it has accumulated in the soil to levels which may significantly reduce crop yields in the future if it is continued to be used. The agrochemicals division is evaluating three new products to find one replacement for ALF6.

ALF7

ALF7 is produced by a small chemical modification to the existing product and requires little research and development (R&D) resources to develop it. As it is closely related to the current variant, it is only expected to remain effective, and in use, for three years. It is unclear whether ALF7 will accumulate in the soil in the same way as ALF6 does.

Red

Red is a new type of pesticide which will incur large amounts of R&D expenditure to develop a commercial version. In addition, the agrochemicals division will have to fund a long-term scientific study into the effect of Red on the environment at a cost of $4m for each of the 15 years that the product will be in use, and for five years afterwards.

Production of Red generates large amounts of toxic by-products which must be treated in the division's waste treatment facility. The production plant used to produce Red must also be decommissioned for cleaning, at an estimated cost of $45m, at the end of the life of the product.

Green

Green is a form of a naturally occurring chemical, thought to be safe and not to accumulate in the environment. It is expected to remain in use for eight years. Production of Green requires relatively large amounts of energy. Significant R&D expenditure is also needed to produce an effective version, as Green remains active in the environment for only a short time. Because of this, Green is unsuitable for use in climates where crop production is already difficult.

The Global Food Production Organisation (GFPO) is a non-governmental organisation which funds new ways to increase global crop production, especially in regions where food for human consumption is already scarce. The GFPO has agreed to make a significant contribution to the R&D costs of producing a replacement for ALF6, but will be unwilling to contribute to the R&D costs for Green because it cannot be used in every region. Similarly, a number of governments, in countries where Alflonnso has licences to operate its other chemical businesses, have warned the company of the potential public disapproval should the agrochemical division choose to replace ALF6 with a product unsuitable for use in areas where food production is scarce.

The newly appointed chief financial officer (CFO) for the agrochemicals division has asked you as a performance management consultant for your advice. 'One of our analysts in the agrochemicals division', she said, 'has produced a single period statement of profit or loss (Appendix 1) to show the profitability of the three new products we are considering as replacements for ALF6.'

'I think the analyst's calculations are too simplistic', she continued. 'The costs of the waste treatment are apportioned based on the expected revenue of the new products. This is consistent with Alflonnso's traditional group accounting policy, but I don't think this gives an accurate costing for the new products. Also, I watched a presentation recently about the use of lifecycle costing and also how environmental management accounting (EMA) can help reduce costs in the categories of conventional, contingent and reputation costs and as a result improve performance.'

Appendix 1

Single period statement of profit or loss for the replacement products for ALF6[1]

	ALF7	Red	Green
Revenue per litre ($)	8·00	13·00	11·00
Quantity sold and produced (million litres)	100	85	75
	$m	$m	$m
Revenue	800	1,105	825
Direct material, labour and energy	(524)	(724)	(565)
Factory overheads	(80)	(122)	(74)
Environmental study	–	(4)	–
Waste treatment of toxic by-products[2]	(54)	(63)	(71)
Net profit[3]	142	192	115
Average profit per litre ($)	1·42	2·26	1·53

Notes to the statement of profit or loss:

[1] – All figures exclude the contribution from the GFPO towards the R&D costs of the new product.

[2] – Waste treatment is an overhead cost incurred in the division's waste treatment facility. Currently, costs of waste treatment are apportioned to products according to expected revenue. The total annual cost of the waste treatment facility, which processes a total of 55m litres of waste each year, is $300m. Any waste treatment capacity not used by any of the three new products can be used to treat waste created during the manufacture of other products in the division. One litre of waste by-product is produced for every 12·5 litres of ALF7 produced, for every 2·5 litres of Red produced and for every 100 litres of Green.

[3] – R&D costs are incurred in the division's R&D facility. In accordance with the group's accounting policy, R&D expenditure is not currently apportioned to individual products. The annual cost of the R&D facility is $60m and has a total of 30,400 R&D hours available, of which 800 hours would be required to develop ALF7, 8,500 hours to develop Red, and 4,000 hours to develop Green.

Required:

(a) (i) Explain how activity based costing may help the agrochemicals division in assessing the profitability of the three new products. (5 marks)

(ii) Using activity based costing, and excluding the value of the grant from the GFPO, calculate the total R&D costs and waste treatment costs of the three new products. (3 marks)

(b) Using your answers from part (a) (ii), calculate the average net profit per litre of each of the three alternative new products over their expected lifecycles and comment on the results. (9 marks)

(c) Advise how environmental management accounting (EMA) may help improve the performance of the agrochemicals division. (8 marks)

(25 marks)

4 Laudan Advertising Agency (LAA) is based in Geeland and has three autonomous subsidiaries: A, B and C. All three subsidiaries are profit centres and LAA seeks to maximise the long-term wealth of its shareholders. A is based in Geeland, while both B and C are located in other parts of the world. LAA is a highly respected advertising agency, which in the last five years has created advertising campaigns for 25 of the world's top 100 most recognised brands. LAA's four key objectives published on its website are:

- To delight our clients by the quality of our work
- Provide excellent value for money to our clients
- Give our clients access to specialist and local knowledge
- Ensure our clients return to us time after time

There are three main functions within LAA:

1. Campaign management, which involves researching and understanding clients' requirements and budgets and designing a suitable advertising campaign for them.
2. Creative design, which is where the visual appearance of the advert and graphics are created.
3. Media buying, which negotiates prices with, and buys advertising time and space from, magazine and newspaper publishers, internet search engines and TV companies.

Each subsidiary has its own department for campaign management and for media buying. Only A, however, has a creative design department.

The directors at LAA believe that without visually appealing design, any advertising campaign is unlikely to be successful and meet the expectations of the client. They identified the importance of being able to produce high quality creative design as a critical success factor for the business. Two years ago, they decided to concentrate all of LAA's creative design at a 'centre of design excellence' within A. The intention was to improve the quality of creative design within the business by giving staff access to the latest design technology, and by attracting the most talented designers to work there.

To encourage the three subsidiaries to use the internal creative design department within A, instead of external third party design agencies, the directors created a new additional key performance indicator on which to appraise the performance of all subsidiaries and of subsidiary managers:

- All subsidiaries, including A, must purchase at least 90% of creative design work internally from A.

Prior to the introduction of this performance indicator, 40% of creative design work in each of the three subsidiaries was purchased from external design agencies.

The directors of LAA have become concerned that the introduction of the new key performance indicator may be causing managers to operate in ways which are not helping to meet LAA's stated objectives. They have asked for comments from subsidiary managers (Appendix 1) about whether they have met the 90% target in the most recent period and if not, to explain why this is.

Appendix 1

Subsidiary managers' comments on achievement of KPI for 90% creative design work purchased internally

Subsidiary A
'A purchased 86% of design work from our internal design department in the period. It would have been almost 100%, but we won a large order for a new client who operates in a specialised industry of which we have no experience. As a result, we had to use the services of a specialised external design agency, which was much more expensive than using our in-house team.'

Subsidiary B
'B purchased 62% of design work internally in the period. Though the quality of the designs is very good, they were more appealing to consumers in Geeland than here in Veeland, where B operates. The internal design department did not seem to understand consumer preferences in Veeland, and many of their designs were rejected by a key client of ours. As a result, an important advertising campaign missed key deadlines, by which time the internal design department had insufficient capacity to finish the work and we had to use an external agency.

'As there is no formal transfer pricing policy in place at LAA, the basis of the transfer price charged by the internal design department is also unclear to us. It appears to be based on full cost of the design work, including apportioned

overheads and an allowance for bad debts and marketing expenses, plus a very substantial mark up. We have spent a long time trying to negotiate this price with A, which is much more expensive than external designers. Furthermore, we are currently being investigated by the tax authorities here in Veeland who have indicated that the prices charged by A for design do seem well in excess of market rates.'

Subsidiary C

'C purchased 91% of design work from the internal design department in the period, as well as achieving all our other performance targets. A key client of ours ran a major advertising campaign during the period. We used the internal design department for the first time for this campaign, instead of the usual external agency that we have used in the past for work for this client. The client was very unhappy with the extra cost that this incurred, as the number of design hours and the hourly rate was much higher than for previous campaigns. The internal design department refused to reduce the price after long negotiations and we had to give a large discount to the client before they would settle our invoice. As a result, our gross profit margin for the period was significantly reduced.

'It would be much fairer if the transfer price charged by A was based on the market price of the services provided.'

Required:

(a) Evaluate how the following help LAA to manage performance in order to achieve its stated objectives:

(i) identifying the critical success factor of producing high quality creative design, and
(ii) setting the key performance indicator for the requirement to purchase 90% of design work internally. (8 marks)

(b) Assess the need for a formal transfer pricing policy at LAA. (9 marks)

(c) Advise the directors whether LAA should use a market value transfer price as suggested by the manager of subsidiary C. (8 marks)

(25 marks)

Present Value Table

Present value of 1 i.e. $(1 + r)^{-n}$

Where r = discount rate
n = number of periods until payment

Discount rate (r)

Periods (n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0·990	0·980	0·971	0·962	0·952	0·943	0·935	0·926	0·917	0·909	1
2	0·980	0·961	0·943	0·925	0·907	0·890	0·873	0·857	0·842	0·826	2
3	0·971	0·942	0·915	0·889	0·864	0·840	0·816	0·794	0·772	0·751	3
4	0·961	0·924	0·888	0·855	0·823	0·792	0·763	0·735	0·708	0·683	4
5	0·951	0·906	0·863	0·822	0·784	0·747	0·713	0·681	0·650	0·621	5
6	0·942	0·888	0·837	0·790	0·746	0·705	0·666	0·630	0·596	0·564	6
7	0·933	0·871	0·813	0·760	0·711	0·665	0·623	0·583	0·547	0·513	7
8	0·923	0·853	0·789	0·731	0·677	0·627	0·582	0·540	0·502	0·467	8
9	0·914	0·837	0·766	0·703	0·645	0·592	0·544	0·500	0·460	0·424	9
10	0·905	0·820	0·744	0·676	0·614	0·558	0·508	0·463	0·422	0·386	10
11	0·896	0·804	0·722	0·650	0·585	0·527	0·475	0·429	0·388	0·350	11
12	0·887	0·788	0·701	0·625	0·557	0·497	0·444	0·397	0·356	0·319	12
13	0·879	0·773	0·681	0·601	0·530	0·469	0·415	0·368	0·326	0·290	13
14	0·870	0·758	0·661	0·577	0·505	0·442	0·388	0·340	0·299	0·263	14
15	0·861	0·743	0·642	0·555	0·481	0·417	0·362	0·315	0·275	0·239	15

(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0·901	0·893	0·885	0·877	0·870	0·862	0·855	0·847	0·840	0·833	1
2	0·812	0·797	0·783	0·769	0·756	0·743	0·731	0·718	0·706	0·694	2
3	0·731	0·712	0·693	0·675	0·658	0·641	0·624	0·609	0·593	0·579	3
4	0·659	0·636	0·613	0·592	0·572	0·552	0·534	0·516	0·499	0·482	4
5	0·593	0·567	0·543	0·519	0·497	0·476	0·456	0·437	0·419	0·402	5
6	0·535	0·507	0·480	0·456	0·432	0·410	0·390	0·370	0·352	0·335	6
7	0·482	0·452	0·425	0·400	0·376	0·354	0·333	0·314	0·296	0·279	7
8	0·434	0·404	0·376	0·351	0·327	0·305	0·285	0·266	0·249	0·233	8
9	0·391	0·361	0·333	0·308	0·284	0·263	0·243	0·225	0·209	0·194	9
10	0·352	0·322	0·295	0·270	0·247	0·227	0·208	0·191	0·176	0·162	10
11	0·317	0·287	0·261	0·237	0·215	0·195	0·178	0·162	0·148	0·135	11
12	0·286	0·257	0·231	0·208	0·187	0·168	0·152	0·137	0·124	0·112	12
13	0·258	0·229	0·204	0·182	0·163	0·145	0·130	0·116	0·104	0·093	13
14	0·232	0·205	0·181	0·160	0·141	0·125	0·111	0·099	0·088	0·078	14
15	0·209	0·183	0·160	0·140	0·123	0·108	0·095	0·084	0·074	0·065	15

Annuity Table

Present value of an annuity of 1 i.e. $\frac{1-(1+r)^{-n}}{r}$

Where r = discount rate
n = number of periods

Discount rate (r)

Periods (n)	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	
1	0·990	0·980	0·971	0·962	0·952	0·943	0·935	0·926	0·917	0·909	1
2	1·970	1·942	1·913	1·886	1·859	1·833	1·808	1·783	1·759	1·736	2
3	2·941	2·884	2·829	2·775	2·723	2·673	2·624	2·577	2·531	2·487	3
4	3·902	3·808	3·717	3·630	3·546	3·465	3·387	3·312	3·240	3·170	4
5	4·853	4·713	4·580	4·452	4·329	4·212	4·100	3·993	3·890	3·791	5
6	5·795	5·601	5·417	5·242	5·076	4·917	4·767	4·623	4·486	4·355	6
7	6·728	6·472	6·230	6·002	5·786	5·582	5·389	5·206	5·033	4·868	7
8	7·652	7·325	7·020	6·733	6·463	6·210	5·971	5·747	5·535	5·335	8
9	8·566	8·162	7·786	7·435	7·108	6·802	6·515	6·247	5·995	5·759	9
10	9·471	8·983	8·530	8·111	7·722	7·360	7·024	6·710	6·418	6·145	10
11	10·368	9·787	9·253	8·760	8·306	7·887	7·499	7·139	6·805	6·495	11
12	11·255	10·575	9·954	9·385	8·863	8·384	7·943	7·536	7·161	6·814	12
13	12·134	11·348	10·635	9·986	9·394	8·853	8·358	7·904	7·487	7·103	13
14	13·004	12·106	11·296	10·563	9·899	9·295	8·745	8·244	7·786	7·367	14
15	13·865	12·849	11·938	11·118	10·380	9·712	9·108	8·559	8·061	7·606	15

(n)	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	
1	0·901	0·893	0·885	0·877	0·870	0·862	0·855	0·847	0·840	0·833	1
2	1·713	1·690	1·668	1·647	1·626	1·605	1·585	1·566	1·547	1·528	2
3	2·444	2·402	2·361	2·322	2·283	2·246	2·210	2·174	2·140	2·106	3
4	3·102	3·037	2·974	2·914	2·855	2·798	2·743	2·690	2·639	2·589	4
5	3·696	3·605	3·517	3·433	3·352	3·274	3·199	3·127	3·058	2·991	5
6	4·231	4·111	3·998	3·889	3·784	3·685	3·589	3·498	3·410	3·326	6
7	4·712	4·564	4·423	4·288	4·160	4·039	3·922	3·812	3·706	3·605	7
8	5·146	4·968	4·799	4·639	4·487	4·344	4·207	4·078	3·954	3·837	8
9	5·537	5·328	5·132	4·946	4·772	4·607	4·451	4·303	4·163	4·031	9
10	5·889	5·650	5·426	5·216	5·019	4·833	4·659	4·494	4·339	4·192	10
11	6·207	5·938	5·687	5·453	5·234	5·029	4·836	4·656	4·486	4·327	11
12	6·492	6·194	5·918	5·660	5·421	5·197	4·988	4·793	4·611	4·439	12
13	6·750	6·424	6·122	5·842	5·583	5·342	5·118	4·910	4·715	4·533	13
14	6·982	6·628	6·302	6·002	5·724	5·468	5·229	5·008	4·802	4·611	14
15	7·191	6·811	6·462	6·142	5·847	5·575	5·324	5·092	4·876	4·675	15

End of Question Paper