Q1. Find the last two digits of (333) ³³³.

- a) 63
- b) 13
- c) 93
- d) 23

Q2. A sales executive's monthly salary has two components: a percentage commission on the achieved sales and a fixed amount. For the first 3 years, the percentage commissions were 30%, 20% and 10% respectively and his fixed salary was Rs.1000, Rs.2000 and Rs.3000 respectively. It was seen that the total yearly salary he received for the first 3 years was exactly the same for each year. Now, what can be said about his annual sales?

a) His annual sales has been growing.

- b) His annual sales has been falling.
- c) His annual sales cannot have gone up in the second year and then gone down in the third.

d) His annual sales went up in the second year and again come down in the third year.

Q3. Choose the correct alternative.

A cubical box is divided into four identical chambers that can hold one ball each. In how many ways can one fill the box with 3 blue balls, 3 red balls and 3 green balls?

- a) 6
- b) 12
- c) 18
- d) 2

Q4. The distance between Mumbai - Central and Surat is 300 km. Two trains simultaneously leave from Mumbai-Central and Surat. After they meet the train travelling towards Surat reaches thereafter 9 hours, while train travelling towards Mumbai Central reaches there after 4 hours. Find the speed of each train in kmph.

- a) 25, 40
- b) 20, 30
- c) 55, 50
- d) 10, 15

Q5. Newspapers ______ against him with glaring headlines, and the opposition denounced the atrocity in ______ wrath.

- a) inveighed ... stentorian
- b) criticised ... bitter
- c) clamoured ... detached
- d) reviewed ... understandable

Q6. In the given figure, there are two concentric circles with radii 10 cm and 20 cm. Also, AB and AC are tangents to the circle with radius 10 cm at P and Q respectively, PQ = 19 cm and BC is a tangent to the circle with radius 20 cm. Find the area of triangle ABC in cm². (Take 3 = 1.732 and 39 = 6.25).

a) 885.5 cm²
b) 306.5 cm²
c) 353.5 cm²
d) 994.5 cm²

Q7. In the following sentence, a part of the sentence or the entire sentence is highlighted. Beneath the sentence, four different ways of phrasing the underlined part are indicated. Choose the best alternative from among the four.

Their patience had been tested by those juveniles since three years, but things had been better for some time now.

- a) juveniles since three years, but things had been better for some time now.
- b) juveniles for three years, but things had been better for some time.
- c) juveniles since three years now, but things had been different for some time.
- d) juveniles for three years now, but things had been different since some time.

DIRECTIONS for questions 8 and 9:

Refer to the data below and answer the questions that follow.

There are seven chapters in a mathematics book - A, B, C, D, E, F, and G. The instructor has to follow certain rules while teaching them.

- i. E cannot be taught before B and C.
- ii. D should be taught before C and G.
- iii. B cannot be taught before G.
- iv. F cannot be taught before C, D, and G.

v. A should be taught before B is taught and the two should not be taught consecutively.

Q8. If only four chapters are taught, which of the following has to be necessarily false?

- a) The instructor can get away without teaching F.
- b) The instructor can avoid teaching E.
- c) The instructor can avoid teaching C.
- d) The instructor can avoid teaching G.

Q9. If only four chapters are to be taught, which of the following is necessarily true?

- a) A has to be taught.
- b) D has to be taught.
- c) B has to be taught.
- d) C has to be taught.

Q10. Read the short passage given below and answer the question that follows.

Contract farming provides a way out, especially now, with small size land holdings. Corporates could provide inputs and marketing. The problem is that laws have to be drafted to protect the farmers and the corporates against bad harvests and land grabbing respectively. Though a system of cooperatives – distinct from cooperative farming – could be introduced for inputs and marketing. But laws relating to this are defective.

Which of the following is most likely to be the reason that the author considers small size land holdings to be favourable for contract farming?

a) Farmers of small size land holdings are unlikely to be the actual owners of the land.

b) Small size land holdings can be managed effectively by corporates who can lease it to farm workers.

c) Inputs and marketing facilities are easier to extend to small size land holdings.

d) It is easier to insure small size land holdings against bad harvests.

Q11. Four alternative summaries are given below the text. Choose the option that best captures the essence of the text.

We are enquiring into the nature of absolute justice and into the character of the perfectly just and into injustice and the perfectly unjust, that we might have an ideal. We were to look at these in order that we might judge of our own happiness and unhappiness according to the standard which they exhibited and the degree in which we resembled them, but not with any view of showing that they could exist in fact.

a) The enquiry into justice is to understand its presence in the world.

b) The ideal of justice can only be arrived at on due enquiry.

c) We may judge our own lives as per the ideals we glean from debates on justice.

d) All enquiries to arrive at standards are not to show actualities but to show potentialities

Q12. Choose the word that is similar or nearly similar in meaning to the word in capital letters.

ECREPIT

- a) disadvantageous
- b) frail
- c) unimportant
- d) deficient

DIRECTIONS for questions 13 and 14: Read the passage below and answer the questions that follow.

As pointed out by Willard Gaylin in his essay, "Harvesting the Dead", the technology we have developed has essentially changed the definition of death. Now although a person could be declared dead, he could have willed his usefulness beyond his mortality. Medical Technology has reached a point where organs can be transplanted from one individual to another. Many see red in such an act as desecration of a human body. However, by donating his or her organs to

give a new lease of life to someone else, the person found a meaning not only in his lifetime but also in his death.

Medicine has often been cited as a means to over-population. Sure, it helps us live a little longer but it also provides us with birth control techniques such as contraceptives and sterility operations to help prevent it. Issues such as euthanasia and abortion have always been topics of debate in the field of medicine. Even before the present day techniques were developed, people already had in place procedures that essentially had similar goals to what is now termed as euthanasia. Science has just provided us with simpler ways that are not tough on the patients themselves. This in my opinion is not the justification but the fact. Further, human beings control the use of any technology. It is a question of ethics of the person resorting to such means. If there is enough reason and rationale behind it, then it can be judged as an act of mercy.

On the other hand, an abuse of this technology is nothing but murder. Even if it results in a few cases of abuse of this science, we cannot possibly discount science or technology as bad or evil. It is its misuse that is bad. There has been a lot of discussion and hype surrounding the recently unveiled Human Genome Project. As one of the researchers puts it, it has opened a library of life which might take at least a century to explore. According to the mission of the Genome Project as given on its main website, it is to identify the thousands of genes found in humans, determine their scientific sequences, interpret the data to find solutions to some of the unsolved questions on human life. Though finding facts about our bodies is its main emphasis, it would also look into the possible ethical and legal consequences of unveiling such data to humankind.

Q13. Which of the following does not agree with the author's point of view as per the passage?

a) Science and technology are the drivers of the future.

b) Medicines may be misused, but that is the fault of the user, not of medical science itself.

c) Organ transplantation is a desecration of the human body.

d) Improvements in medical technology have had both positive and negative effects on population growth

Q14. The crux of the passage is that:

a) it seems almost impossible now to imagine living in a world without science and technology.

b) with such a huge knowledge base at our command, there is no telling where science and technology might lead us next.

c) the benefits far outweigh any costs connected with technology and science.

d) the use and abuse of technology are hard to disentangle.

Q15. Choose the correct alternative.

Vikram asked Mayank to count the number of mangoes on a mango tree near their college. Mayank said, "The number obtained by reversing the digits in the number of mangoes that are one third of half the total number of mangoes on the tree is 10 more than two third of half the mangoes on the tree. Also the number of mangoes is not less than the square of the lowest two digit number and not more than double of the highest two digit number". Find the sum of digits in the number of mangoes on the tree.

- a) 17
- b) 14
- c) 12
- d) None of these