SET - A

P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Sixth Semester, B.E. - Semester End Examination; July / Aug. - 2022

Aptitude and Reasoning Development - Advanced (ARDA)

(Common to all Branches)

Time: 2 hr.   Max. Marks: 50

Instructions:

Questions 1 – 25 carry Two marks each; Put a (✔) mark against correct option in the answer sheet.

Reading comprehension

Nichole's Summer Vacation

Every summer Nichole goes to the countryside for a month. She stays at her uncle's farm and helps him. She works very hard but she likes it because she loves to spend time with her cousin Macy. Every morning she wakes up at six o'clock, first she collects the eggs and feeds the chickens, then she has breakfast at 6:30 and after breakfast, she helps her aunt with the house chores for an hour. She can't wait to spend time with her cousin Macy. They always have a great time together. They climb trees, pick fruits and flowers. They love being outdoors. They come back home before dark and get ready for dinner. After dinner, they go out and feed the animals. Before they go to bed they watch TV for a little bit or read books. They are always very tired at the end of the day and usually fall asleep watching TV or reading.

1. Where does Nichole go in summer?

    a) She goes to a big city.

    b) She goes to her uncle's farm.

    c) She goes to her cousin's hotel.

    d) She goes camping.

2. Which one of the following questions you cannot answer?

    a) How long does Nichole stay at her uncle's farm?

    b) How does Nichole help her uncle and aunt?

    c) What does Nichole do before she goes to bed?

    d) What's her favorite food?

3. Which of the followings isn't true about Macy and Nichole?

    a) Macy and Nichole can climb trees.   b) They have a good time together.

    c) They live together.   d) They feed the animals.

Permutation and Combination

4. A boy has nine trousers and 12 shirts. In how many different ways can he select a trouser and a shirt?

    a) 21   b) 12   c) 9   d) 108   e) 101

5. How many three letter words are formed using the letters of the word TIME?

    a) 12   b) 20   c) 16   d) 24   e) 30

Average

6. In the first 10 overs of a cricket game, the run rate was only 3.2. What should be the run rate in the remaining 40 overs to reach the target of 282 runs?

   a) A.6.25   b) B.6.5   c) C.6.75   d) D.7

7. The average of 20 numbers is zero. Of them, at the most, how many may be greater than zero?

   a) 0   b) 1   c) 10   d) 19

Mixtures and Allegation

8. A man buys milk at the rate of 5 rupees per litre and mixes it with water. By selling the mixture at rs 4 a litre he gains 25 percent. How much water did each litre of the mixture contain

   a) 9/25   b) 11/25   c) 16/25   d) 19/25

9. A mixture containing milk and water in the ratio 3:2 and another mixture contains them in the ratio 4:5. How many litres of the later must be mixed with 3 litres of the former. So that the resulting mixture may contain equal quantities of milk and water?

   a) 3.3/4 litre   b) 4.1/2 litre   c) 5.2/3 litre   d) 5.2/5 litre   e) None of these

Arithmetic progression

10. The tenth term common to both the A.P. 3,7,11,.and 1,6,11, is:

   a) 171   b) 191   c) 211   d) None of these

11. 3rd term of an A.P. is 6 and 5th term of that A.P. is 12. Then find the 21* term of that A.P.

   a) 40   b) 42   c) 60   d) 63

Geometric Progression

12. For a g.p. the ratio of the 7th and the third terms is 16. the sum of 9 terms is 2555. what is the first term?

   a) 7   b) 5   c) 4   d) 9

13. THE G.M. OF 5 AND 8 IS

   a) 40   b) $2\sqrt{10}$ c) $10\sqrt{2}$ d) 20

Harmonic Progression

14. If a=3 and r=2 then find the sum up 5th term.

   a) 95   b) 82   c) 93   d) 97

15. if sixth and eleventh terms of an H.P. are 1/11 and 1/19, respectively. What will be the first term of the H.P.? Trusted by 3,

   a) 1   b) ½   c) 1/3   d) 1/4

Coding and Decoding

16. Solve the following?

   If RAT = 9   GAME = 12   LIVER = 15

   Then

   POLYSTER = ?

   a) 17   b) 22   c) 24   d) 19

17. Direction: In the following question, a group of inter related words is given. Choose a word from the given alternatives that is similar to the given words and hence belongs to the same group.

   If N = 14; NOSE = 53, then NOCK = ?

   a) 42   b) 43   c) 44   d) 45

Cryptic arithmetic

18. How many numbers satisfy the condition $A^3+B^3+C^3 =ABC$, where ABC is a three digit number.

   a) 1   b) 2   c) 3   d) 4

19. If KANSAS + OHIO = OREGON Then find the value of G + R + O + S + S

   a) 7   b) 8   c) 9   d) 10

Data interpretation

 Study the following table to answer the 5 questions that are given below it.

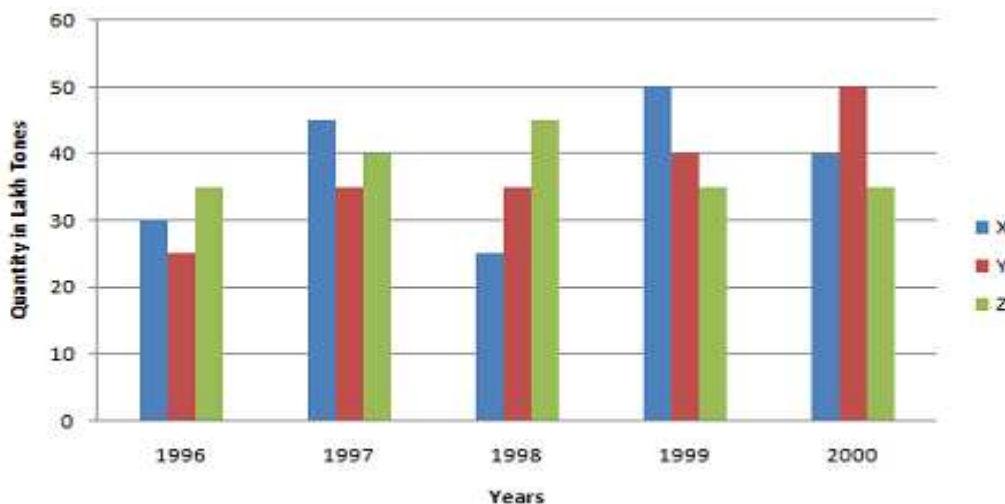| Item of Expenditure/ Year	Salary	Fuel and Transport	Bonus	Interest on Loans	Taxes
1998	288	98	3.00	23.4	83
1999	342	112	2.52	32.5	108
2000	324	101	3.84	41.6	74
2001	336	133	3.38	36.4	88
2002	420	142	3.96	49.4	98

20. The ratio between the total expenditure on taxes for all the years and the total expenditure on Fuel and Transport for all the years respectively is approximately:

   a) 4:7   b) 10:13   c) 15:18   d) 5:8

21. What is the average amount of interest per year which the Company had to pay during this period?

   a) Rs. 32.43 lakhs   b) Rs. 33.72 lakhs   c) Rs. 34.18 lakhs   d) Rs. 36.66 lakhs

Production of paper (in lakh tonnes) by three companies X, Y and Z over the years. Study the graph and answer the questions that follow.

22. What is the difference between the production of company Z in 1998 and company Y in 1996?

   a) 2,00,000 tons   b) 20,00,000 tons   c) 20,000 tons   d) 2,00,00,000 tons

23. What is the percentage increase in the production of company Y from 1996 to 1999?

   a) 30%   b) 45%   c) 50%   d) 60%

Greek Mythology

Greek Mythology will always be culturally relevant in our world. There is a great deal of Greek mythology symbolism of Greek gods in today's society. Greek mythology will remain compatible to the ideas of society.

Many aspects of our culture involve and began from Greek myths. The solar system is, for the most part, also named after Greek gods, "with the exception of Earth, all of the planets in our solar system have names from Greek or Roman mythology" (Starchild NASA 1). There is also much symbolism of Greek gods and mythology in today's society. Greek mythology is greatly reflected in advertising. Several examples are Nike, the goddess of victory, and the very popular sports company, Nike.

Another popular advertisement is for the FTD flower delivery company. Their logo includes Hermes or Mercury, the messenger of the gods with winged feet. Apollo, the god of music, has a famous music hall in New York named after him, the Apollo Theater. There is also a magazine of the arts called Daedalus. Greek mythology is relatable to humans. Many of the heroes in Greek mythology are on a quest for truth. In today's society, humans are still looking for truthful answers to their many questions. Myths explain things the people are believed to not understand. Creation stories in Greek mythology tell of how everything came to be, in their opinion. Many Creation stories include a flood story, which leads Christians to have greater faith that it occurred. It is also important to study Greek mythology because it is part of history. There can be a lot learned about the Greek culture. Greek mythology will always be relevant and relatable to the people in this world.

24. This selection is mostly about Greek _____.

    a) culture   b) mythology

    c) gods   d) symbolism

25. Greek methodology is greatly reflected in _____.

    a) the solar system   b) the Greek culture

    c) today's advertising   d) much symbolism

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