

BALLARI INSTITUTE OF TECHNOLOGY & MANAGEMENT

(Autonomous Institute under Visvesvaraya Technological University, Belagavi)

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Course Code

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Fifth Semester B.E. Degree Examinations, February 2025

ADVANCED APTITUDE

Duration: 1 hr

Max. Marks: 50

Instructions to the Candidates:

- All questions are compulsory
- Each question carries 1 mark
- Use only black ball point pen
- Darkening two circles for the same question makes the answer invalid
- Damaging/overwriting, using whiteners on the OMR are strictly prohibited.

Q.NoQuestion

- In an election between two candidates, one candidate secured 60% of valid votes and elected by a majority of 400 votes. Find the total number of valid votes?
(A) 3000 (B) 2000 (C) 2500 (D) 2600
- Anil saves 20% of his income. His income is increased by 20% and so he increased his expenditure by 30%. What is the percentage change in his savings?
(A) 4% fall (B) 4% rise (C) 20% rise (D) 20% fall
- In an examination, a student secures 40% of the maximum marks and fails by 10 marks. If he scored 50% of the maximum marks he would have been passed by 15 marks. Find the minimum marks required to pass the exam?
(A) 250 (B) 100 (C) 110 (D) 125
- If length of a rectangle is increased by 20%, then by what % its breadth is decreased to maintain its area remains the same?
(A) 16 $\frac{2}{3}$ % (B) 12 $\frac{1}{2}$ % (C) 8 $\frac{1}{3}$ % (D) 33 $\frac{1}{3}$ %
- If cost price of 20 articles = selling price of 16 articles, then find whether the person is in profit or loss by how much percent?
(A) 15% Profit (B) 15% loss (C) 20% loss (D) 25% loss
- Raju bought a ring and sold it to Raghu at a profit of 10%. Raghu sold it to Ramu at a loss of 20%. If Ramu paid Rs 880 then the cost price of the ring Raju bought is
(A) Rs 1100 (B) Rs 1,050 (C) Rs 1000 (D) None of these
- By selling an article at Rs.9,600 a person incurred a loss of 20%. Find the cost price of the article?
(A) Rs.10,000 (B) Rs.11,000 (C) Rs.12,000 (D) None
- The average weight of a class of 10 students is increased by 1.5 kg, if a girl weighing 40 kg is replaced by a boy, find the weight of that boy?
(A) 50 kg (B) 55 kg (C) 45 kg (D) 35 kg
- The average age of a family of 6 members is 22 years. If the age of the youngest member be 7 years, find the average age of the family at the birth of the youngest member?
(A) 18 years (B) 20 years (C) 22 years (D) 24 years
- What is the number should be subtracted from the number 21906 to make it as a perfect square?
(A) 1 (B) 2 (C) 3 (D) 4
- A certain sum of money invested in Simple interest amounts to Rs.2592 in 2 years and to Rs.2784 in 4 years. Find the sum and the rate of interest.
(A) Rs. 2000, 4% (B) Rs. 2400, 4% (C) Rs. 3000, 5% (D) Rs. 2500, 4%

12. The difference between S.I. and C.I. on a certain sum of money at 10% per annum for 2 years is Rs. 20, find the sum?
(A) Rs.2000 (B) Rs.2500 (C) Rs.1800 (D) None
13. What least number should be added to 781843 to make it divisible by 11?
(A) 1 (B) 2 (C) 3 (D) 4
14. How many numbers are there in between 500 and 1000, which are exactly divisible by 18?
(A) 27 (B) 28 (C) 55 (D) 34
15. Find the unit's digit in the sum $(532)^{431} + (478)^{531}$
(A) 7 (B) 8 (C) 9 (D) 0
16. Four bells ring at intervals of 10 minutes, 12 minutes, 15 minutes, & 20 minutes respectively. If they ring together at 10 a.m., find after what interval of time will they ring together again?
(A) 9 a.m. (B) 10 a.m. (C) 11 a.m. (D) 1 p.m.
17. A purse contains 1 Rs, 50 paise, 25 paise and 20 paise coins are in the ratio 1:2:4:5. If the total amount Rs.400 then find the number of 20 paise coins
(A) 488 (B) 500 (C) 524 (D) 504
18. What number should be subtracted from each one of the numbers 54, 71, 75 & 99 so that the numbers are to be in proportional?
(A) 1 (B) 2 (C) 3 (D) 4
19. Present age's ratio of A and B is 5:7, after 12 years their ages ratio becomes 4:5. Then find present age of A.
(A) 18 years (B) 19 years (C) 20 years (D) 22 years
20. A can complete a piece of work in 20 days. B can do it in 30 days. Both together can complete in how many days?
(A) 12 days (B) 10 days (C) 8 days (D) 6 days
21. 30 men can do a piece of work in 12 days working 8 hours per day. How many hours a day should take for 20 men in 16 days?
(A) 10 days (B) 9 days (C) 16 days (D) 15 days
22. Pipe A alone can fill a tank in 20 minutes and Pipe B alone can fills it in 30 minutes. Pipe C can empty the full tank in 60 minutes. If pipes A, B and C are open together in how many minutes the tank will be filled?
(A) 15 min (B) 16 min (C) 12 min (D) 10 min
23. By travelling with a speed of $\frac{8}{3}$ rd of his usual speed, a student can reach to his school by 20 minutes early. Find his usual time to reach the destination?
(A) 24 min (B) 32 min (C) 40 min (D) 16 min
24. A person covered first $\frac{1}{3}$ rd of the distance @ 10 kmph, next $\frac{1}{3}$ rd of the distance @ 20 kmph and remaining $\frac{1}{3}$ rd of the distance @ 40 kmph, then find the average speed of the total journey?
(A) 19 kmph (B) 20 kmph (C) 16 kmph (D) 17.14 kmph
25. A train travelling with a speed of 54 kmph crosses an electric pole in 30 seconds. Find the length of the train?
(A) 350 m (B) 420 m (C) 450 m (D) 600 m
26. How many odd numbers less than 1000 can be formed using the digits 0,2,5,7, repetition of digits is allowed?
(A) 52 (B) 32 (C) 22 (D) 42
27. The letters of the word 'MOTHER' are arranged as in a dictionary, the rank of the word is
(A) 309 (B) 226 (C) 153 (D) None
28. Two dice are thrown together, then the probability that the sum of the numbers on the two faces is divisible by 4 (or) 6.
(A) $\frac{5}{18}$ (B) $\frac{7}{18}$ (C) $\frac{9}{18}$ (D) $\frac{5}{12}$
29. On what dates Friday will fall in the month of April, 2018?
(A) 5, 12, 19, 26 (B) 6, 13, 20, 27
(C) 3, 10, 17, 24 (D) 2, 9, 16, 23, 30

30. Find the mirror reflection time, if clock shows 7: 50?
 (A) 4 : 50 (B) 5 : 10 (C) 4 : 10 (D) 3 : 50
31. A person started at a point P, moved a distance of 60 meters towards East and reached a point Q. From Q after travelling successively 50m, 100m and 90m by turning to his left each time and finally reached the point R. What is the distance between P and R?
 (A) 40 m (B) $40\sqrt{2}$ m (C) $40/\sqrt{2}$ m (D) None
32. If Anu says, "Bhanu's father is the only son of my father – in – law", then how is Bhanu related to Anu?
 (A) Sister (B) Cousin (C) Daughter (D) Niece
33. Find the missing number in the following series.
 5, 10, 17, 26, ____?
 (A) 37 (B) 35 (C) 45 (D) 50
34. If in a certain code language, MODERATE is coded as ORHJXHBN. In that same language which word is coded as HUNTER?
 (A) JYQXJY (B) JXRYKX (C) JXRYKY (D) JYRXKY
35. What is missing term in the following letter series?
 PZN, KGL, GMJ, DRH, ____
 (A) AVF (B) BVF (C) BUF (D) AVG

Directions for questions 36 and 37

In a class, 70% students passed in mathematics, 60% passed in English and 10% failed in both, 16 students passed in both.

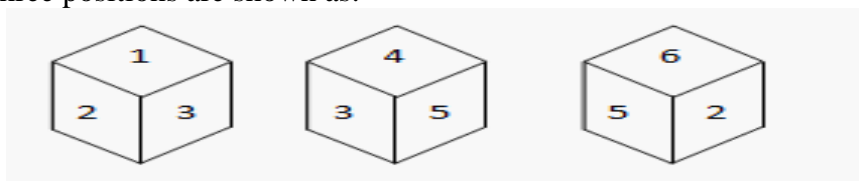
36. How many students are there in the class?
 (A) 80 (B) 60 (C) 50 (D) 40
37. How many students are passed in at most 1 subject?
 (A) 24 (B) 12 (C) 20 (D) 28

Directions for the questions 38 and 39

The questions based on the data given below.

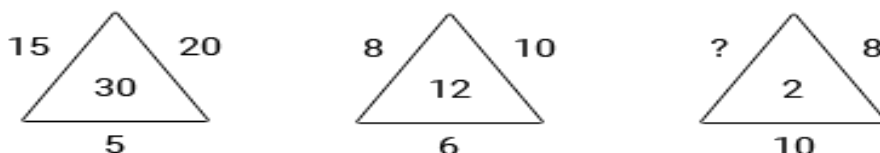
A Cube is painted on three pairs of its opposite faces with Red, Blue and Green. This Cube is now cut into 125 smaller identical cubes.

38. The number of cubes with 3 faces painted
 (A) 48 (B) 50 (C) 8 (D) 56
39. The number of cubes with no face painted
 (A) 27 (B) 36 (C) 54 (D) 64
40. A dice with six faces is marked with six numbers 1, 2, 3, 4, 5 and 6 respectively. This dice is rolled three times and three positions are shown as:



Find the number opposite to 1.

- (A) 6 (B) 5 (C) 2 (D) 4
41. Find the missing number in the following.



- (A) 4 (B) 6 (C) 12 (D) 22
42. In a certain coded language CAT is coded as 48, BAT is coded as 46. In same coded language how RAT is coded?
 (A) 78 (B) 39 (C) 76 (D) 72

43. Moon: Satellite:: Earth : ____?
 (A) Sun (B) Solar System (C) Planet (D) No
44. Many fathers are brothers
 All brothers are priests
 (A) No father is a priest (B) Some fathers are not priests
 (C) Many fathers are priests (D) Both (B) and (C) above
45. Some watches are latches
 Some latches are not catches
 (A) Some watches are not catches (B) No watch is a catch
 (C) Some watches are catches (D) None of the above

Directions for the question 46

The question based on the data given below.

If only Data 1 is sufficient to solve then Ans (1)

If only Data 2 is sufficient to solve then Ans (2)

If both Data 1 and Data2 are required then Ans (3)

If both Data (1) & (2) are not sufficient then Ans (4)

46. If the list price of a new car was Rs.12,300, what was the cost of the car to the dealer?

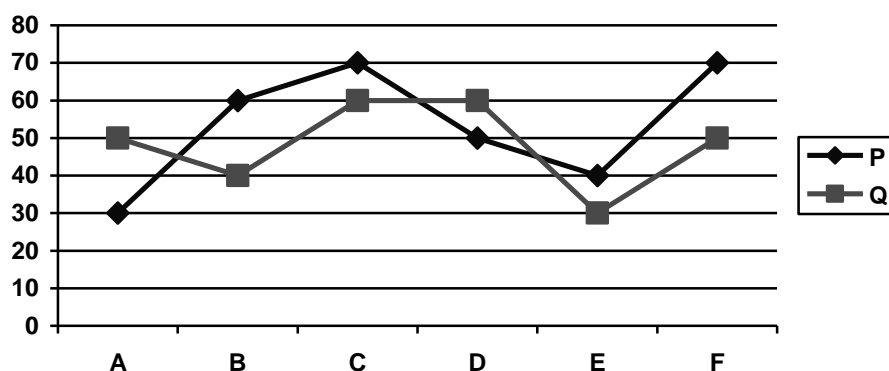
Data 1: The cost to the dealer was equal to 80 % of the list price.

Data 2: The car was sold for Rs.11, 070.

- (A) 1 (B) 2 (C) 3 (D) 4
47. Find odd man out
 (A) periscope (B) microscope (C) stethoscope (D) telescope

Directions for the questions 48 to 50:

Following graph shows the marks of two students P and Q in Six subjects



48. In how many subjects did Q get more marks than the average marks of all subjects?
 (A) Two (B) One (C) Four (D) Three
49. The difference between the average marks of P and Q is ____
 (A) 5 (B) 4.77 (C) 6 (D) 5.33
50. In how many subjects did P get more marks than Q?
 (A) Four (B) Three (C) Two (D) Five

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