D 52924   (Pages : 4)   Name...

Reg. No.....................................

THIRD SEMESTER B.VOC. DEGREE EXAMINATION
NOVEMBER 2023

Common Course

A11—BASIC MATHEMATICS AND GENERAL AWARENESS

Time : Two Hours and a Half   Maximum : 80 Marks

Section A (Short Answer Type)

All questions can be answered.
Each question carries 2 marks.

(Ceiling 25)

1. Find the H.C.F. of 513, 1134 and 1215.

2. What is the value of x in the equation $4\frac{1}{2} + 3\frac{1}{6} + x + 2\frac{1}{3} = 13\frac{2}{5}$?

3. If $\sqrt{2} = 1.4142$, find the value of $\dfrac{\sqrt{2}}{2 + \sqrt{2}}$.

4. The difference between the value of a number increased by 25 % and the value of the original number decreased by 30 % is 22. What is the original number ?

5. Find the simple interest on Rs. 3,000 at $6\frac{1}{4}\%$ per annum for the period from 4$^{\text{th}}$ February, 2009 to 18$^{\text{th}}$ April, 2009.

6. If A + B means A is the mother of B ; A – B means A is the brother of B ; A/B means A is the father of B and A×x B means A is the sister of B, which of the following shows that P is the maternal uncle of Q ?

   (a) Q – N + M × P.

   (b) P + S × N – Q.

   (c) P – M + N × Q

   (d) Q – S/P.

   (e) None of these.

Turn over

7. Six friends A, B, C, D, E and F are sitting around the hexagonal table each at one corner. A is second to the left of F. B is the neighbour of C and D. E is-second to the left of D. Which of the following is sitting opposite to E ?

    (a) C.
    (b) B.

    (c) Cannot be determined.
    (d) D.

    (e) None of these.

8. Find the missing term : BDF, CFI, DHL, ————————.

    (a) EJO.
    (b) EML.

    (c) CJM.
    (d) EMI.

9. Vidya walked 25 meter towards south. Then she turned to her left and walked 20 meter. She then turned to her left and walked 25 meter. She again turned to her right and walked 15 meter. At what distance is she from the starting point and in which direction ?

    (a) 35 meter East.
    (b) 35 meter North.

    (c) 40 meter East.
    (d) 60 meter East.

10. How many pairs of letters are there in the word **ATMOSPHERE** which have as many letters between them in the word as there are between in the English alphabet ?

    (a) Two.
    (b) Three.

    (c) Four.
    (d) Five.

    (e) None of these.

11. Write a short note on criteria of good research.

12. Write a short note on graphical user interface.

13. What is world wide web (WWW) ?

14. What are Foreign banks ?

15. What is a fixed deposit ?

Section B (Paragraph/Problem Type)

All questions can be answered.
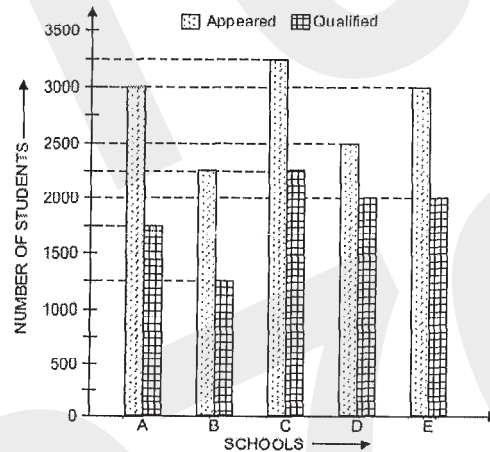*Each question carries 5 marks.*
(Ceiling 35)

16. The average age of A and B is 20 years. If A is replaced by C, the average age become 19 years and if B is replace by C, the average age become 21 years. Find the ages of A, B and C.

17. Rakesh purchased 20 dozen notebooks at Rs. 48 per dozen. He sold 8 dozen at 10 % profit and the the remaining 12 dozen with 20 % profit, what is his profit percentage in the transaction ?

18. If A, B, C, D are quantities of the same kind such that A : B = 3 : 4, B : C = 5 : 7 and C : D = 8 : 9. Find :

    (a)   A : C.   (b)   B : D.

    (c)   A : D.   (d)   A :B : C : D.

19. In the class of Reeja, the boys are twice than of girls. Reeja ranked 17th from the top. If there are 7 girls ahead of Reeja and the rank of Reeja is 20th from the last in the class, How many girls are there after Reeja downward ?

20. An illustration of the **input** and the **steps of rearrangement** by a word arrangement machine is given below :

Input	:	39	121	48	18	76	112	14	45	63	96
Step I	:	14	39	121	48	18	76	112	45	63	96
Step II	:	14	39	48	18	76	112	45	63	96	121
Step III	:	14	18	39	48	76	112	45	63	96	121
Step IV	:	14	18	39	48	76	45	63	96	112	121

Write down first three steps for the input : 45, 78, 97, 132, 28, 16, 146, 54, 99, 112.

21. Write a short note on the objectives of research.

22. Describe the types of research and its methods.

23. Discuss the organizations of insurance business in India.

Turn over

Section C (Essay Type)

Answer any **two** *of the following questions.*
Each question carries 10 *marks.*

24. Details of Students appeared and qualified from various institutions at a scholarship exam is given in the following graph :

a) The average number of students qualified in the examination from Schools C and D is what percent of the average number of students appeared for the examination from the same schools ?

b) What is the ratio of the number of students appeared to the number of students qualified at the scholarship exam from School C ?

c) What is the ratio of the number of students qualified in the scholarship examination from School A and the number of students qualified in the examination from School B ?

d) The number of students appeared for the scholarship exam from School D is approximately what percent of the total number of students appeared for the exam from all the schools together ?

e) What is the difference between the average number of students appeared in the scholarship exam from all the given schools and the average number of students qualified from all the schools together ?

25. Briefly describe the different steps involved in a research process.

26. Discuss about the hardware and software of a computer.

27. Define "crossing" of a cheque and explain with specimens the different form of crossing with reference to the significance attached to each.

$(2 \times 10 = 20$ marks$)$