

Vidhigya Challenger Series
Daily Practice Sheet 14
Quantitative Techniques

Directions (1-5): Read the following information carefully and answer the questions that follow.

'Vidhi' is a Principal of a law school. Her school has 26 students and the names of these students are based on English alphabets i.e. from 'A' to 'Z'. She wants to check the intelligence of her students and thus she decided to conduct an exam but this exam was given by only four students, 'A', 'B', 'C' and 'D'. The exam consists of two papers. The first paper is a written exam and the other one is practical exam. Maximum marks in the written exam are 80 and maximum marks of the practical exam are 60. The weighted percent of the written exam is 60% and that of the practical exam is 40%. 'A' got 52 weighted score in the exam. 'B' also got a weighted score of 52 and he obtained 55 marks in practical exam. 'C' obtained 50 marks in practical exam. 'D' obtained 70 marks in written exam and 75% in practical exam.

Note:

I. Total maximum marks = Maximum of written exam + Maximum marks of Practical exam

II. Total maximum weighted score = (weighted % x maximum marks of written exam) + (weighted % x maximum marks of Practical exam)

III. Total obtained weighted score = (weighted % x obtained marks of written exam) + (weighted % x obtained marks of Practical exam)

1. If 'C' got 65 weighted marks in the exam then find the ratio of score of 'C' in the written exam to the score of 'B' in the written exam.

- (a) 1:2 (b) 2:1 (c) 2:3 (d) 3:2

2. If 'D' scored 7.14% more marks in the written exam, then his weighted score is what percent of the maximum weighted score?

- (a) 63% (b) 75% (c) 82.5% (d) 87.5%

3. What is A's written score if he scores 25 in practical exam?

- (a) 70 (b) 75 (c) 80 (d) 85

4. If 'A' scored 40 marks in practical exam, then find the difference of score of 'A' in the written exam and the marks scored by 'B' in the written exam.

- (a) 5 (b) 10 (c) 15 (d) 20

5. If C's total weighted score is 62, then his written exam score is what percent more than the practical exam score?

- (a) 20% (b) 30% (c) 40% (d) 50%

Answers & Explanations

1. Ans. d

Sol. COMMON EXPLANATION

	WRITTEN EXAM SCORE (OUT OF 80)	PRACTICAL EXAM SCORE (OUT OF 60)	WEIGHTED SCORE
A	-	-	52
B	-	55	52
C	-	50	-
D	70	45	-

Weighted score of B = 60% of written exam score + 40% of Practical exam score

$$52 = 0.6 * \text{written score} + 0.4 * 55$$

$$52 = 0.6W + 0.4 * 55$$

$$52 = 0.6W + 22$$

$$0.6W = 30$$

$$6W = 300$$

$$W = 50$$

So, score of written exam of B = 50

Now, given C got 65 weighted marks

$$65 = 0.6W + 0.4P$$

$$65 = 0.6W + 0.4 \times 50$$

$$65 = 0.6W + 20$$

$$0.6W = 45$$

$$W = 450/6 = 75$$

So, score of written exam of C = 75

Required ratio = C: B = 75:50 = 3:2

Hence, option (d) is correct.

2. Ans. d

Sol. following the COMMON EXPLANATION

Score of D earlier = 70

Now this score was increased by 7.14% = $\frac{1}{14}$

So, new score of D in written = $70 + 5 = 75$

Score of D in practical exam = 45

Weighted score of D = 60% of 75 + 40% of 45

$$= 45 + 18 = 63$$

Maximum weighted score = 60% of 80 + 40% of 60 = $48 + 24 = 72$

Required % = $\frac{63}{72} = \frac{7}{8} = 87.5\%$

Hence, option (d) is correct.

3. Ans. a

Sol. following the COMMON EXPLANATION

Weighted score of A = 60% of written exam score + 40% of Practical exam score

$$52 = 0.6W + 0.4 \times 25$$

$$0.6W = 52 - 10 = 42$$

$$W = 70$$

Hence, option (a) is correct.

4. Ans. b

Sol. following the COMMON EXPLANATION

Weighted score of A = 60% of written exam score + 40% of Practical exam score

$$52 = 0.6W + 0.4 \times 40$$

$$0.6W = 52 - 16 = 36$$

$$W = 60$$

Also, score of written exam of B = 50

Required value = $60 - 50 = 10$

Hence, option (b) is correct.

5. Ans. c

Sol. following the COMMON EXPLANATION

Weighted score of C = 60% of written exam score + 40% of Practical exam score

$$62 = 0.6W + 0.4 \times 50$$

$$0.6W = 62 - 20 = 42$$

$$W = 70$$

His score in Practical = 50 and in Written = 70

Required % = $\frac{20}{50} = 40\%$

Hence, option (c) is correct.