Mathematics assessment activity – Answer sheet

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Total marks available 19

You have 20 minutes to complete this assessment activity.

Instructions:
- Read each question carefully.
- Show all your workings.
- Write your answers in the spaces provided.
- Ensure your answers are clear and legible.

Foundation level questions (1-7):

Question 1: In a survey, 60 out of 100 employees reported satisfaction at work. Calculate the relative frequency probability of an employee being satisfied at work. (1 mark)

60/100 or 0.6

Question 2: If 25% of employees at a company are satisfied with their work-life balance, calculate the probability that a randomly chosen employee is not satisfied with their work-life balance. (1 mark)

75% or 0.75

Question 3: Suppose 40% of employees are unhappy at work because of a heavy workload. In this case, what is the probability that an employee is unhappy at work due to reasons other than a heavy workload? (1 mark)

60% or 0.6

Question 4: A company has 150 employees, and 90 of them are satisfied at work. If an employee is randomly selected, find the probability that they are satisfied at work. (1 mark)

90/150 or 3/5 or 0.6

Question 5: Create a probability tree diagram for the following scenario: In a company, 70% of employees are satisfied at work, and 30% are not satisfied. Among the satisfied employees, 60% attribute their satisfaction to good promotion prospects. (3 marks)

- Satisfied: 70% (1 mark)
- Not Satisfied: 30% (1 mark)
- Satisfied due to good promotion prospects: 60% (1 mark)

Question 6: Using the probability tree diagram from Question 5, what is the probability that an employee is satisfied at work due to good promotion prospects? (1 mark)

0.42

Question 7: In the same company as Question 5, what is the probability that an employee is not satisfied at work? (1 mark)

0.3

Higher level questions (8-12):

Question 8: In a different company, 80% of employees are happy at work, and 20% are unhappy. Among the happy employees, 70% attribute their happiness to supportive management. Create a probability tree diagram for this company's situation. (3 marks)

- Happy: 80% (1 mark)
- Unhappy: 20% (1 mark)
- Happy due to supportive management: 70% (1 mark)

Question 9: Using the probability tree diagram from Question 10, what is the probability that an employee is happy at work due to supportive management? (1 mark)

0.56

Question 10: Suppose 60% of employees in a company are satisfied at work. Out of those, 80% are satisfied due to a good work-life balance. Calculate the probability that an employee is satisfied at work due to a good work-life balance. (2 marks)

0.48

Question 11: In a survey of 200 employees, 75% reported being satisfied at work. Calculate the number of employees who are not satisfied at work. (2 mark)

50

Question 12: Suppose 25% of employees are satisfied at work, and 20% of those are satisfied because of good promotion prospects. Calculate the probability that an employee is satisfied at work due to good promotion prospects. (2 marks)

0.05