1 (e) Factorise 10d + 15

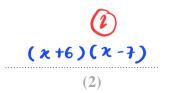
The highest common factor of 10 and 15 is 5

$$10 \div 5 = 2$$
 $15 \div 5 = 3$
 $5(2d + 3)$

5(2d + 3)

2 (a) Factorise $x^2 - x - 42$

$$(x+6)(x-7)$$



(Total for Question 2 is 2 marks)

3 (b) Factorise fully $16m^3g^3 + 24m^2g^5$

$$8(2m^3g^3 + 3m^2g^5)$$
 - factorise integers
 $= 8m^2(2mg^3 + 3g^5)$ - factorise m terms
 $= 8m^2g^3(2m + 3g^2)$ - factorise g terms

$$\frac{8 \, \text{m}^{\frac{2}{3}} \, (2 \, \text{m} + 3 \, \text{g}^{\frac{2}{3}})}{(2)}$$

4 (a) Factorise 25*f* – 10

(Total for Question 4 is 1 marks)

5 (b) Factorise fully 9ef - 12f

6 (b) Factorise 35 + 5f

(Total for Question 6 is 1 marks)

7 (b) Factorise fully $5y + 20y^2$

5y (1+4y) (2)

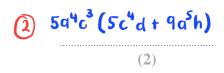
(Total for Question 7 is 2 marks)

8 (b) Factorise 3y - 21

3 (4-7)

3(y-7) (1)

9 (a) Factorise fully $25a^4c^7d + 45a^9c^3h$



(Total for Question 9 is 2 marks)

10 (i) Factorise $x^2 + 2x - 24$

$$(x-4)(x+6)$$

(ii) Hence solve $x^2 + 2x - 24 = 0$

(Total for Question 10 is 3 marks)

11 (b) Factorise 4c - 14

(Total for Question 11 is 1 marks)

12 (c) Factorise
$$x^2 - 11x + 24$$

$$x = \frac{11 \pm \sqrt{(-11)^2 + (1)(24)}}{2}$$

$$= \frac{11 \pm \sqrt{25}}{2}$$

$$= \frac{11 + 5}{2} \quad \text{or} \quad \frac{11 - 5}{2}$$

$$= 8 \quad \text{or} \quad 3$$

$$= (x - 8)(x - 3) \quad \boxed{1}$$

(Total for Question 12 is 2 marks)

13 (b) Factorise fully $8p^2 - 2p$

(Total for Question 13 is 2 marks)

14 (a) Factorise fully $15y^4 + 20uy^3$

(Total for Question 14 is 2 marks)

15 (b) (i) Factorise $x^2 + 5x - 36$

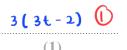
$$\chi^{2} + 5\chi - 36$$
 $(\chi + 9)(\chi - 4)$ 2

(ii) Hence, solve $x^2 + 5x - 36 = 0$

$$(x+9)(x-4) = 0$$
 $x+9=0$ or $x-4=0$
 $x=-9$ $x=4$

(Total for Question 15 is 3 marks)

16 (g) Factorise 9*t* – 6



17 (b) (i) Factorise $x^2 + 8x - 9$

$$(x - 1)(x + 9)$$

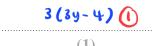
(ii) Hence, solve $x^2 + 8x - 9 = 0$

(Total for Question 17 is 3 marks)

18 (d) Factorise fully $10c^3d^2 + 15cd^4$

(2)

19 (d) Factorise 9y - 12



(Total for Question 19 is 1 marks)

20 (i) Factorise $x^2 + 5x - 24$

(ii) Hence, solve $x^2 + 5x - 24 = 0$

(Total for Question 20 is 3 marks)

21 (a) Factorise 6x - 15

(Total for Question 21 is 1 marks)

22 (c) Factorise $n^2 - 7n + 12$



(Total for Question 22 is 2 marks)

23 (b) (i) Factorise $y^2 - 2y - 35$

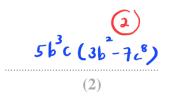
(ii) Hence, solve $y^2 - 2y - 35 = 0$

(Total for Question 23 is 3 marks)

24 (c) Factorise fully $15b^5c - 35b^3c^9$

$$5(3b^{5}c - 7b^{3}c^{9})$$

 $5b^{3}(3b^{2}c - 7c^{9})$
 $5b^{3}c(3b^{2} - 7c^{8})$



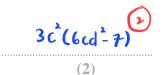
(Total for Question 24 is 2 marks)

25 (a) Factorise fully

$$18c^3d^2 - 21c^2$$

$$3(6c^3d^2-7c^2)$$

 $3c^2(6cd^2-7)$



(b) (i) Factorise

$$y^2 - 3y - 18$$

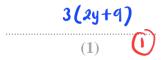
$$(y-6)(y+3)$$



(ii) Hence, solve
$$y^2 - 3y - 18 = 0$$

(Total for Question 25 is 5 marks)

26 (b) Factorise 6y + 27



27 (a) Factorise $y^2 - 2y - 48$

(Total for Question 27 is 2 marks)

28 (e) Factorise
$$g^2 + 7g$$
 9 (9 t 1)



29 (c) Factorise fully $14x^2y^4 + 21x^3y^2$

$$7(2x^{2}y^{4} + 3x^{3}y^{2})$$
 $7x^{2}(2y^{4} + 3xy^{2})$
 $7x^{2}y^{2}(2y^{2} + 3xy)$
 $($

30 (b) Factorise $y^2 - 9y + 20$

(Total for Question 30 is 2 marks)

31 (a) Factorise 6y – 27

32 (c) Factorise fully $16a^2b^3 + 20a^3b$

4a²b (4b²+5a)

(d) (i) Factorise $x^2 + 9x - 22$

(2)

(ii) Hence solve $x^2 + 9x - 22 = 0$

~II ,2 (1)

(Total for Question 32 is 5 marks)

33 (b) Factorise fully 12a - 18b

6 (2a - 3b)