

Subject:

حساب ریاضی شماره ۱۳

مختار سلو

بهم ریخته B

$$a_1 = 40$$

سوال ۱

$$a_n = 41 = \frac{1}{2}a + \frac{1}{2}d \sim \frac{1}{2}d = 41 \Rightarrow t_n = 40 + v(n-1)$$

$$d = v$$

$$20n = 40 + v(n-1)$$

$$14n = vn - v$$

$$n = 20$$

$$14v = vn$$

$$\frac{99K + 14}{99v}$$

سوال ۲ اولین عدد ۱۳ رقیب = ۹۸ + ۱۳ = ۱۰۱ و آخرین عدد ۲۳ رقیب =

$$n = \frac{99v - 101}{v} + 1 = \frac{129}{v}$$

$$a_{n+1} + a_{n+2} + a_{n+3} = -4n + 12$$

سوال ۳

$$a_n + d + a_{n+2} + d + a_{n+3} + d = -4n + 12 \Rightarrow 3a_n + 4d = -4n + 12$$

$$\rightarrow n=1 \Rightarrow 3a_1 + 4d = -4 + 12 \Rightarrow 3a_1 + 4d = 8$$

$$n=2 \Rightarrow 3a_2 + 4d = -8 + 12 \Rightarrow 3a_2 + 4d = 4$$

$$3a_1 + 4d = 8$$

$$a_{14} = a_1 + 13d = -24, a_n = a_1 + vd = -n \rightarrow -24 - 13 = -37$$

$$b = \frac{a+c}{2}$$

$$r \times (r^{m+1}) = r^m - 1 + r^m - r$$

سوال ۴

$$r^{m+2} = r^m (1 + r^m) - r$$

$$r^m \times r^2 = r^m (1 + r^m) - r \Rightarrow 1 + r^m = 8$$

$$\Rightarrow a_3 = \frac{r^3}{r^2} - 1 = 4$$

$$\Rightarrow a_4 = \frac{r^{m+1}}{r^m} = 14$$

$$\Rightarrow a_{13} = \frac{r^{13}}{r^m} - r = 44$$

راه حل یابین صفه نوشته شد

$$a_{14} - a_{10} = 4 \Rightarrow a + 11d - a - 9d = 4 \Rightarrow d = 1$$

سوال ۵

$$a_{14} + a_{10} = 24 \Rightarrow a + 11d + a + 9d = 24 \Rightarrow 2a + 20d = 24$$

$$t_{r1} = \frac{-12d + 21d(r_0)}{3vd} \leq t_n = \frac{-12d + 21d(n-1)}{3vd} \leq a = -12d$$

$$3vd$$

$$a_1 + a_2 + a_3 + a_4 + a_5 = \frac{1}{5}(a_4 + a_5 + a_6 + a_7 + a_8)$$

سوال ۶

$$a + a + d + a + 2d + a + 3d + a + 4d = \frac{1}{5}(a + d + a + 2d + a + 3d + a + 4d + a + 5d)$$

$$5a + 10d = \frac{1}{5}(5a + 15d)$$

$$\omega(a+rd) = \frac{\omega}{r} (a+rd)$$

$$a+rd = \frac{1}{r} a + \frac{r}{r} d \rightarrow \frac{r}{r} a = \frac{1}{r} d$$

$$\frac{ar}{a} = \frac{a+d}{a} = \frac{a+ra}{a} = \sqrt{r} \Rightarrow ra = d$$

$$t_n = t_{n-r} + \omega$$

$$t_{1r} = t_{1r-r} + \omega \rightarrow t_{1r} = t_q + \omega$$

$$t_\Lambda = t_{\Lambda-r} + \omega \rightarrow t_\Lambda = t_\omega + \omega$$

$$\Rightarrow d = \omega$$

(سؤال ٧)

$$(t_q + t_\omega)(t_q - t_\omega) = t_q^2 - t_\omega^2 = (a+rd+a+rd)(a+rd-a+rd)$$

$$t_v = a+rd \rightarrow a+r_0 \quad r_0 a + r_0 \omega = d = \omega = (ra+rd)(rd)$$

$$\rightarrow \frac{t_q^2 - t_\omega^2}{t_v} = \frac{r_0(a+r_0)}{a+r_0} = r_0$$

$$d = \frac{b-a}{n+1} \rightarrow \frac{r+\sqrt{r}-r+r\sqrt{r}}{1r+1} =$$

$$\frac{r\sqrt{r}}{1r} = \sqrt{r}$$

(سؤال ٨)

$$d = \frac{r_r - r}{r_n - r + 1} = \frac{r_0}{r_n - r} = \frac{1\omega}{r_n - 1} = d$$

(سؤال ٩)

$$t_{n+1} = t_1 + nd \rightarrow 11 = r + nd \Rightarrow nd = 9 \Rightarrow 9 = n \left(\frac{1\omega}{r_n - 1} \right)$$

$$\boxed{r = n} \quad \omega n = 9n - r \Rightarrow r = n \left(\frac{\omega}{r_n - 1} \right)$$

$$a_n + a_{n+r} = a_r + a_{1v}$$

$$n + n + r = r + 1v$$

$$rn = 1r \Rightarrow n = 1 \Rightarrow a_1 + a_{1r} = a_r + a_{1v}$$

$$a_n = r a_{\frac{n}{r}} \Rightarrow a_1 = r a_r$$

$$a+vd = r a + r d \rightarrow ra = -rd$$

$$\boxed{a = -d}$$

$$a_m = a + d(n-1) = 0 \Rightarrow -d + dm - d = 0$$

$$dm = rd \quad \boxed{m = r}$$

(سؤال ١٠)

$$a_3 + a_1 = a_1 + a_1$$

$$r^n - 1 + r^{2n} - r = r(r^{n+1})$$

$$r^{2n} - r = r(r \times r^n) - r^n$$

$$r^{2n} - r \times r^n - r = 0 \longrightarrow r^n = t$$

$$t^2 - rt - r = 0 \longrightarrow t = r \longrightarrow r^n = r \longrightarrow n = 1$$

جواب ۱

$$\text{حاصل} \rightarrow \frac{r^2 - 1}{r} / \frac{r^{n+1}}{r} / \frac{r(r)}{r - r} = \boxed{24}$$