11 ⇒ Consider two statements:—

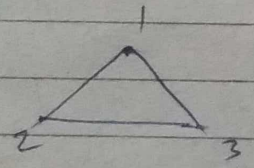
I ⇒ strict two phase locking protocol generates conflict serializable schedule that are also recoverable.

II ⇒ "Timestamp ordering concurrency control protocol with "Thomas" write rule can generate view serializable schedules that are not conflict serializable.

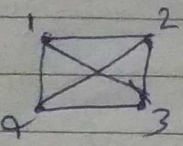
True — Both

12 ⇒ Let G be an undirected complete graph on n vertices, where $n > 2$. Then, number of different Hamiltonian cycles in G is equal to —

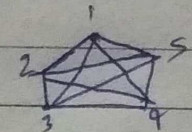
Sol^n



→ 1



→ 3



→ 12

for n

$$\frac{(n-1)!}{2}$$

Ans

C.W

1-2-3-4

Same 2-3-4-1

3-4-1-2

A.C.W

Same 1-2-3-4

4-4-3-2

(13) $\lim_{x \to 3} \frac{x^4 - 81}{2x^2 - 5x - 3}$ $\left(\frac{0}{0}\right)$

(a)

$= \lim_{x \to 3} \frac{4x^3 - 0}{4x - 5} = \frac{4 \times 27}{7}$

$= \frac{108}{7}$ Ans

(14) Which statement not correct about B+ Tree ~~use~~ PS used for creating index –

(A) B+ tree is height balance tree

(B) Non-leaf nodes have pointers to data-records.

(C) Key values in each node are kept in sorted order.

(D) Each leaf node has a pointers to the next leaf node.

(15) for $\Sigma = \{a, b\}$, RG, $L = \{x / x = a^{2k+3k}$ or $x = b^{10+12k}\}$ $k \geq 0$

pumping length for L. ?

(d)

Sol^n $L = \{a^2(a^3)^* \text{ or } b^{10}(b^{12})^*\}$

$= \{a^2, a^5, a^8, \ldots, b^{10}, b^{22}, b^{34}, \ldots\}$

pumping length = 24 Ans

16 Which protocol pairs can be used to send & retrive e-mails ?

b

a) IMAS, POP3
b) SMTP, POP3
c) SMTP, MIME
d) IMAP, SMTP

17 #include <unistd.h>
int main()
{
int i;
for(i=0; i<10; i++)
if (i%2 == 0) fork();
return 0;
}

31

Total no. of child process = 31 Ans

18 #include <stdio.h>
int jumble(int x, int y)
{ x = 2*x + y;
return x;
}
int main() {
int x=2, y=5;
y = jumble(y,x); x = jumble(y,x);
printf("%d", x); return 0; }

26

O/P = 26

(1979)

$S \to Aa$
$A \to BD$
$B \to b|\varepsilon$
$D \to d|\varepsilon$

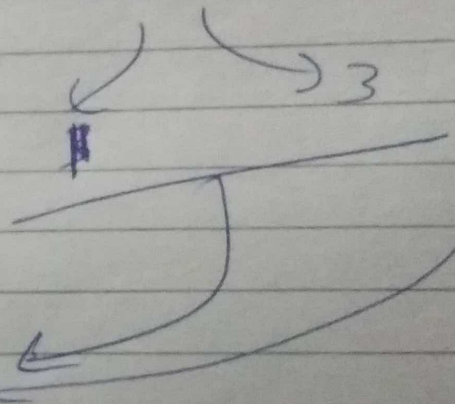
a	b	d	$
3	2	1	0

(31)

Compute FOLLOW set in non-terminal B.
↓ write index value in decending order.

Sol^n

follow(B) = {d, a, $}



(31) Ans

(2019)

(0.08) An array of 25 distinct elements is to be sorted using quicksort. Assume that the pivot element is chosen uniformly at random. The probability that the pivot element gets placed in the worst possible location in the 1st round of partitioning is _____

Sol^n

probability = $\frac{2}{25}$ = (0.08) Ans

(pivot 1st or last)