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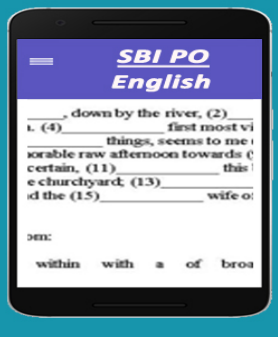
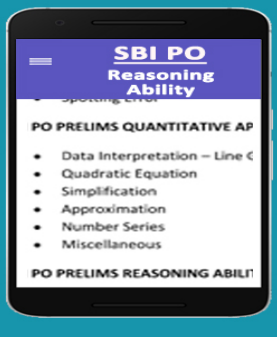
SBI PO Prelims

English Language



Quantitative Aptitude

Reasoning Ability



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SBI PO PRE (QUANT) MEMORY BASED SOLUTIONS

1. (c); $6^3-6,\ 5^3+5, 4^3-4, 3^3+3, 2^3-2, 1^3+1 \ldots\ldots\ldots 3^3+3=30$

2. (c); $\times 2.5,\ \times 3,\ \times 3.5,\ \times 4 \ldots\ldots\ldots$
$157.5 \times 4 = 630$

3. (d); $\times 2 + 6,\ \times 2 + 10,\ \times 2 + 14,\ \times 2 + 18 \ldots\ldots\ldots\ldots$
$(2290 \times 2) + 14 = 4594$

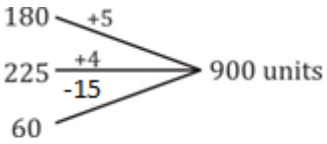
4. (a); $\times 2 + 2^2, \times 3 + 3^2,\ \times 4 + 4^2 \ldots\ldots\ldots\ldots$
$(38 \times 3) + 3^2 = 123$

5. (e); $1^3+1,\ 4^3-4, 2^3+2, 5^3-5, 3^3+3, 6^3-6$
$6^3 - 6 = 210$

6. (d); Let usually S.P. = 100
After discounts price $= \frac{85}{100} \times \frac{75}{100} \times \frac{108}{100} \times 100$
$= 68.85\%$
$\therefore$ Requried % $= (100 - 68.85) = 31.15\%$

7. (b); P — 45000 × 12
Q — 54000 × 6
R — 30000 × 8
Ratio of their profit = 45 : 27 : 20
$\therefore$ Total profit earned $= \frac{92}{45} \times 13500 = 13500$
$= 27600$

8. (c);



At 3 : 00 PM units filled $= 2 \times 5 + 4 = 14$ units
Time required to empty in units $= \frac{14}{6}$ hours
= 140 minutes
= 2 hr 20 min.
$\therefore$ it will be emptied at 5 : 20 p.m.

9. (e); Let sum invested at scheme B = P

$$6678 = P\left[\left(1+\frac{10}{100}\right)^2 - 1\right]$$
$$6678 = P\left(\frac{11}{10} \times \frac{11}{10} - 1\right)$$
$$6678 = P\left(\frac{21}{100}\right)$$
$$P = \frac{6678 \times 100}{21}$$
$$P = 31800$$

Now Let Required Sum $= x$

$$\therefore (31800 - x) = \frac{x \times 14 \times 8}{100}$$
$$25 \times 31800 - 25x = 28x$$
$$53x = 31800 \times 25$$

$x = 15000$ Rs.

10. (c); Let distance between B and C=x
Distance between A and B=$x + 4$

$$\frac{x}{20} - \frac{x+4}{28} = \frac{36}{60}$$
$$\frac{7x - 5x - 20}{140} = \frac{3}{5}$$
$$2x - 20 = 84$$
$$2x = 104$$

$x = 52$ km
$\therefore$ Distance from A to B = 56 km

11. (c); Let Milk = $14x$
Water = $3x$
Now, $\frac{14x+5}{3x+2.5} = \frac{4}{1}$
$14x + 5 = 12x + 10$
$2x = 5$
$x = 2.5$
$\therefore$ initial quantity $= 17 \times 2.5 + 25.5 = 68$

12. (d); Let present average = x year
Total age = $5x$ years
According to questions
$5x - y + z = 5x - 15$
$y \rightarrow$ Old member, $z \rightarrow$ New member
$-y + z = -15$
$y - z = 15$

13. (c); According to the question
Rohit = 85
Monika = 85 − 10 = 75
Rahul = 75 + 55 = 130
Arun= 130 − 35 = 95
Raju = 95 + 44 = 139
Total mark = 139 + 61 = 200
Required percentage $= \frac{139}{200} \times 100 = 69.5\% \simeq 70\%$

14. (b); Time taken by A to reach start point $= \frac{900}{27\times5} \times 18 =$ 120 sec
Time taken by B to reach start point $= \frac{900}{36\times5} \times 18 = 90$ sec.
LCM of 90 and 120 = 30 × 3 × 4
= 360 sec.
$\therefore$ Required time $= \frac{360}{60} = 6$ min

15. (d); Let radius = r
$$\therefore \pi r^2 h = \frac{4}{3}\pi r^3$$
$$h = \frac{4}{3}r$$
$$3h = 4r$$
$3h = 2d\ (\because 2r = d)$

16. (b);$6x^2 + 21x + 10x + 35 = 0$
$3x(2x + 7) + 5(2x + 7) = 0$
$(3x + 5)(2x + 7) = 0$
$x = \frac{-5}{3}, \frac{-7}{2}$
$2y^2 + 2y + y + 1 = 0$
$2y(y + 1) + 1(y + 1) = 0$

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$$(2y+1)(y+1)=0$$
$$y=\frac{-1}{2},-1$$
$$x<y$$

17. (c); $2x^2-4x-\sqrt{13}x+2\sqrt{13}=0$
$$2x(x-2)-\sqrt{13}(x-2)=0$$
$$x=2,\frac{\sqrt{13}}{2}$$
$$10y^2-18y-5\sqrt{13}y+9\sqrt{13}=0$$
$$2y(5y-9)-\sqrt{13}(5y-9)=0$$
$$y=\frac{9}{5},\frac{\sqrt{13}}{2}$$
$$x\geq y$$

18. (c); $2x^2+4x+5x+10=0$
$$2x(x+2)+5(x+2)=0$$
$$x=-2,\frac{-5}{2}$$
$$4y^2+28y+45=0$$
$$4y^2+18y+10y+45=0$$
$$2y(2y+9)+5(2y+9)=0$$
$$y=\frac{-5}{2},\frac{-9}{2}$$
$$x\geq y$$

19. (e); $15x^2-20x+9x-12=0$
$$5x(3x-4)+3(3x-4)=0$$
$$x=\frac{-3}{5},\frac{4}{3}$$
$$20y^2-25y-24y+30=0$$
$$5y(4y-5)-6(4y-5)=0$$
$$y=\frac{6}{5},\frac{5}{4}$$
No relation can be established

20. (e); $2x^2-10x+3x-15=0$
$$2x(x-5)+3(x-5)=0$$
$$x=-\frac{3}{2},5$$
$$6y^2+14y+3y+7=0$$
$$2y(3y+7)+1(3y+7)=0$$
$$y=-\frac{1}{2},\frac{-7}{3}$$
No relation can be established

21. (b); Required % $=\frac{\frac{18560}{800}}{\frac{4500}{300}}\times 100$
$$=\frac{23.2}{15}\times 100\approx 155\%$$

22. (c); Production of vegetables per hectare in tones
Pea : $\frac{72792}{7200}=10.11$
Tomato : $\frac{79092}{2600}=30.42$
Beans : $\frac{20895}{2100}=9.95$
Onion & Garlic : $\frac{29490}{1500}=19.66$
Cabbage : $\frac{42670}{1700}=25.1$
Cauliflower : $\frac{13790}{700}=19.7$
Root vegetables : $\frac{18560}{800}=23.20$
Brinjal : $\frac{4500}{300}=15$
Leafy vegetables $\frac{28600}{2900}=9.86$
Tomato, Cabbage and root vegetables are more than 20 tonnes.

23. (c); Required Area $=\frac{7200+800}{1500+300}$
$$=\frac{80}{18}$$
$$=40:9$$

24. (c); Required average production $=\frac{310389}{9}=34487.67$

25. (a); Required tonnes per hectare $==\frac{42670}{1700}-\frac{13790}{700}$
$$=25.1-19.7$$
$$=5.4$$

26. (c); $27\times ?=\frac{36}{100}\times\left(\frac{225}{700}\times 4585\right)\times\frac{100}{15}$
$$?=\frac{36\times 225\times 4585\times 100}{27\times 100\times 700\times 15}=131$$

27. (c); $(1.3+2.2)\div 0.28=\frac{?}{100}\times 40$
$$?=\frac{12.5\times 100}{40}=31.25$$

28. (a); $[(22)^3\times\{13+9\}^3]^{1/3}$
$$=22\times 22=484$$

29. (b); $\frac{?}{6}=\left\{99^2\div\sqrt{(121)^2}\right\}\times\sqrt{(8.5)^2}$
$$\frac{?}{6}=\frac{99\times 99\times 8.5}{121}$$
$$?=4131$$

30. (e); $\frac{13}{7}\times\frac{11}{6}\times\frac{9}{5}\times\frac{70}{429}=\frac{1}{5}\times ?$
$$?=5$$

31. (a) Percentage increase in selected students in PG in 2005 $=\frac{6035-1800}{1800}\times 100=235\%$

Percentage increase in number of applied students in PhD in 2008 $=\frac{13500-9000}{9000}\times 100=50\%$
Required ratio $=235:50=47:10$

32. (a) Average students selected for PhD program $=\frac{2160+4550+2850+4455+3402+3900}{6}=\frac{21317}{6}=3553$ (approx)
Average number of student applied for PG program $=\frac{8000+17000+10000+14000+16500+11000}{6}=\frac{76500}{6}=12750$
Required percentage $=\frac{12750-3553}{12750}\times 100=72\%$ less

33. (e) Difference for year 2004 $=4000-2160=1840$
For year, 2005 $=13000-4550=8450$
For year, 2006 $=6000-2850=3150$
For year, 2007 $=9000-4455=4545$
For year, 2008 $=13500-3402=10098$
For year, 2009 $=15000-3900=11100$

34. (b) Number of students selected in 2005, 2007 and 2009 for PhD course $=13000\times\frac{35}{100}+9000\times\frac{49.5}{100}+15000\times\frac{26}{100}$
$$=4550+4455+3900$$
$=12905$
Number of students applied in 2004, 2006 and 2008 for PhD course $=4000+6000+13500=23500$
Asked ratio $=12905:23500$
$$=2581:4700$$

35. (a)Percentage increase/decrease in the number of selected students

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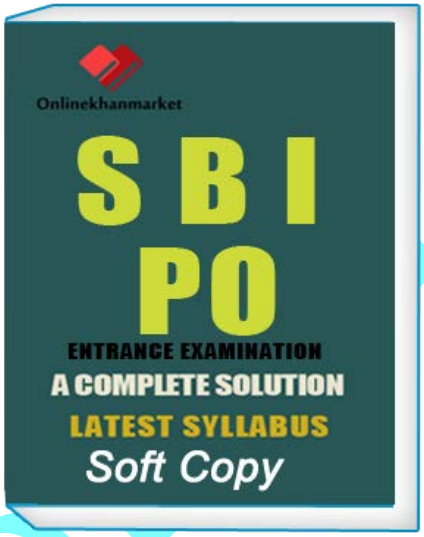
For year 2005 $= \frac{6035-1800}{1800} \times 100 = 235\%$

For year 2006 $= \frac{6035-2350}{6035} \times 100 = 61\%$

For year 2007 $= \frac{6370-2350}{2350} \times 100 = 171\%$

For year 2008 $= \frac{9570-6370}{6370} \times 100 = 50\%$

For year 2009 $= \frac{9570-5280}{9570} \times 100 = 44.8\%$



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