IBPS PO Preliminary Grand Test –IPP-180920

HINTS & SOLUTIONS

ANSWER KEY

1.(2)	21.(5)	41.(3)	61.(2)	81.(2)
2.(1)	22.(1)	42.(2)	62.(4)	82.(4)
3.(1)	23.(5)	43.(1)	63.(1)	83.(4)
4.(2)	24.(5)	44.(4)	64.(3)	84.(5)
5.(5)	25.(4)	45.(1)	65.(1)	85.(2)
6.(3)	26.(2)	46.(5)	66.(4)	86.(1)
7.(1)	27.(4)	47.(3)	67.(5)	87.(1)
8.(2)	28.(1)	48.(4)	68.(4)	88.(2)
9.(2)	29.(3)	49.(1)	69.(4)	89.(2)
10.(3)	30.(5)	50.(5)	70.(4)	90.(3)
11.(3)	31.(5)	51.(2)	71.(2)	91.(5)
12.(1)	32.(3)	52.(2)	72.(3)	92.(4)
13.(3)	33.(5)	53.(4)	73.(4)	93.(1)
14.(2)	34.(1)	54.(1)	74.(2)	94.(3)
15.(4)	35.(4)	55.(1)	75.(4)	95.(1)
16.(5)	36.(3)	56.(2)	76.(1)	96.(4)
17.(2)	37.(4)	57.(2)	77.(2)	97.(2)
18.(5)	38.(1)	58.(1)	78.(3)	98.(5)
19.(4)	39.(4)	59.(5)	79.(5)	99.(4)
20.(2)	40.(2)	60.(4)	80.(1)	100.(2)

HINTS & SOLUTIONS

1.(2) **Acerbic** means tasting sour or bitter.
Irritated means showing or feeling slight anger; annoyed.

2.(1) **Elan** means energy, style, and enthusiasm.
Enthusiastic means having or showing intense and eager enjoyment, interest, or approval.

3.(1) **Absorbed** means take up the attention of (someone); interest greatly.
Care means the provision of what is necessary for the health, welfare, maintenance, and protection of someone or something.

4.(2) **Believe** means accept that (something) is true, especially without proof.
Affect means to have an effect on; make a difference to.

5.(5) **Circumstances** a fact or condition connected with or relevant to an event or action.
Investigate means to carry out research or study into (a subject or problem, typically one in a scientific or academic field).

6.(3) Use 'was' in place of 'is' as the sentence is in the past tense.

7.(1) Use 'had' in place of 'would have'.

8.(2) Use negligence in place of 'negligent' as negligent is an adjective and negligence is noun.

9.(2) Use 'likely to cause the inflation' in place of 'likely the cause of inflation'.

10.(3) Use 'has' in place of 'have' as nationalism is singular.

11.(3) "strategy" is the more suitable word in context of its meaning to the sentence. The word 'strategy' means a plan of action designed to achieve a long-term or overall aim.

12.(1) "raising" is the correct word replacement as it means lifting or moving to a higher position or level.

13.(3) "would" is the correct grammar usage as there is no certainty but speculation.

14.(2) "priority" is the correct word replacement as it means a thing that is regarded as more important than others.

15.(4) "recklessly" is the correct usage in context of its meaning to the sentence. Other words are irrelevant. The word 'recklessly' means without regard to the danger or the consequences of one's actions; rashly.

16.(5) "drastic" is the correct word in context of its usage in the sentence. Hence it doesn't require any improvement.

17.(2) "regulate" is the correct word replacement as it means control or maintain the rate or speed of (a machine or process) so that it operates properly.

18.(5) 'techniques' is the correct word in context of its usage in the sentence. Hence it doesn't require any improvement.

19.(4) The phrase "expand farm size" adds meaning to the sentence. The word 'expand' means become or make larger or more extensive.

20.(2) "improve" is the correct word replacement as it means achieve or produce something better than.

21.(5) Read the first paragraph carefully, "This is the first time a satellite weighing over 3.1 tonnes has been launched from India to reach the geostationary orbit about 36,000 km from Earth. The Mk-III can launch satellites weighing up to four tonnes, which almost doubles India's current launch capacity." and "On Monday, an indigenously developed lithium-ion battery was used for the first time to power the satellite." Hence all three given features make the newly launched vehicle GSLV Mk-III unique.

22.(1) Refer the first paragraph, "This can be done by switching over to electric propulsion for orbit rising and to keep the satellite in the right position and orientation in the orbit through its lifetime (that is, station keeping). The switch-over would reduce the weight of the vehicle as it can do away with nearly two tonnes of propellants and carry heavier satellites." Hence (1) is the correct option in context of the passage.

23.(5) Read the passage carefully. Refer "It can now be said without hesitation that India belongs to the elite club of countries that have mastered cryogenic technology." and, "The Mark-III will be operational with the success of one more developmental flight, which is set to take place within a year. This will make India self-reliant in launching heavier satellites, bringing down costs substantially." Hence all three statements justify the author's view regarding the development of ISRO.

24.(5) All the given statements are true in context of the passage.

25.(4) Refer the last paragraph, "With fewer propulsion stages and, therefore, control systems, the Mk-III ....the Mk-III can carry three astronauts and have more space to carry out experiments." Hence only statements (I), (II) and (III) are correct in context of the passage.

26.(2) **Propulsion** means the action of driving or pushing forwards. Hence '**impulse'** is the word most similar in meaning to it.
Satiety means the feeling or state of being sated.
Revulsion means a sense of disgust and loathing.

27.(4) **Crew** means a group of people who work on and operate a ship, aircraft etc. **Bevy** means a large group of people or things of a particular kind. Hence both are similar in meanings.
Oodles mean a very great number or amount of something.
Laity means ordinary people, as distinct from professionals or experts.

28.(1) **Propellant** means a substance used as a reagent in a rocket engine to provide thrust. **Mulligan** means something that blows up. Hence both are similar in meanings.
Motif means a dominant or recurring idea in an artistic work.
Ardour means great enthusiasm or passion.

29.(3) **Elite** means a select group that is superior in terms of ability or qualities to the rest of a group or society. **Dregs** mean the most worthless part or parts of something. Hence both are opposite in meanings.
Patriciate means a noble order or class.
Gentry mean people of good social position, specifically the class of people next below the nobility in position and birth.

30.(5) **Operational** means in or ready for use. **Severed** means put an end to (a connection or relationship); break off. Hence both are opposite in meanings.
Expedient means (of an action) convenient and practical although possibly improper or immoral.

31.(5)
I. $x^2 - 264 = 361$
or, $x^2 = 361 + 264$
$\therefore x^2 = 625$
$\therefore x = \sqrt{625} = \pm 25$

II. $y^3 - 878 = 453$
or, $y^3 = 453 + 878$
or, $y^3 = 1331$
$\therefore y = \sqrt[3]{1331} = 11$

Hence no relation can be established.

32.(3)
I. $3x^2 + 14x + 15 = 0$
or, $3x^2 + 9x + 5x + 15 = 0$
or, $3x(x+3) + 5(x+3) = 0$
or, $(3x+5)(x+3) = 0$
$\therefore x = -\frac{5}{3}, -3$

II. $3y^2 - 13y + 14 = 0$
or, $3y^2 - 6y - 7y + 14 = 0$
or, $3y(y-2) - 7(y-2) = 0$
or, $(3y-7)(y-2) = 0$
$\therefore y = \frac{7}{3}, 2$

Hence $x < y$

33.(5) Let $\sqrt{x} = a$
$63a^2 - 94a + 35 = 0$
$63a^2 - 49a - 45a + 35 = 0$
$7a(9a - 7) - 5(9a - 7) = 0$
$a = \frac{5}{7}, \frac{7}{9}$
$x = \frac{25}{49}, \frac{49}{81}$
Let $\sqrt{y} = b$
$32b^2 - 28b - 24b + 21 = 0$
$4b(8b - 7) - 3(8b - 7) = 0$
$b = \frac{3}{4}, \frac{7}{8}$
$y = \frac{9}{16}, \frac{49}{64}$
No relation can be established.

34.(1)
$x^2 - 7\sqrt{3}x - 5\sqrt{5}x + 35\sqrt{15} = 0$
$x(x - 7\sqrt{3}) - 5\sqrt{5}(x - 7\sqrt{3}) = 0$
$x = 5\sqrt{5}, 7\sqrt{3}$
$y^2 - 2\sqrt{5}y - 3\sqrt{5}y + 30 = 0$
$y(y - 2\sqrt{5}) - 3\sqrt{5}(y - 2\sqrt{5}) = 0$
$y = 2\sqrt{5}, 3\sqrt{5}$
$x > y$

35.(4)
$x^2 - 4x - 3x + 12 = 0$
$x(x - 4) - 3(x - 4) = 0$
$(x - 3)(x - 4) = 0$
$x = 3, 4$
$y^2 - 4y - 8y + 32 = 0$
$y(y - 4) - 8(y - 4) = 0$
$(y - 8)(y - 4) = 0$
$y = 4, 8$
$x \le y$

36.(3) Let time taken by all to complete the work = x hours
Then,
A will take = (x + 6)h
B will take = (x + 1)h
C will take = (2x)h
So,
$\frac{1}{(x+6)} + \frac{1}{x+1} + \frac{1}{2x} = \frac{1}{x}$
$= \frac{2x^2 + 2x + 2x^2 + 12x + x^2 + 7x + 6}{(x+6)(x+1)(2x)} = \frac{1}{x}$
$5x^2 + 21x + 6 = 2x^2 + 14x + 12$
$3x^2 + 7x - 6 = 0$
$3x^2 + 9x - 2x - 6 = 0$
$3x(x+3) - 2(x+3) = 0$
$x = \frac{2}{3}, -3$
so,
x = 40 mins

37.(4) Let
60% marks = 40x
so,
$100\% = \frac{40x}{60} \times 100 = \frac{200}{3}x$
Maximum marks for each subject $= \frac{200}{3 \times 5} \times x = \frac{40}{3}x$
Pass marks for each subject $= \frac{45}{100} \times \frac{40}{3}x = 6x$

So, he passed in all 5 subjects

38.(1) Let he bought 4x kg, 5x kg and 6x kg of dry fruits
Total cost price for dealer = (4x × 100) + (5x × 80) + (6x × 60)
= 400x + 400x + 360x = 1160 x
Total selling price for dealer = 1740 x
Required price per kg $= \frac{1740x}{15x} = 116$

39.(4) Total yearly expenditure for man
$= 250,000 + 2000 + \frac{2}{100} \times 250,000 = 257000$
Total monthly expenditure for man $= \frac{257000}{12}$
Required monthly rent $= \frac{15}{100} \times \frac{257000}{12} = 3212.5$ Rs

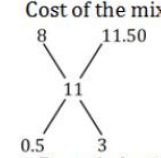**40.(2)** Let the new cost of sofa set = x
$x + \frac{9}{100}x = 13080$
$x = \frac{13080 \times 100}{109} = 12000$
Required % reduction $= \frac{1080}{13080}\% = 8.26\%$

41.(3) Average production of rice in kerala & U.P.

$$= \frac{1}{2}\left[\frac{5}{4} \times 20 + \frac{2}{3} \times 13\right] \times 514$$

$$= 8652\frac{1}{3} \text{ ton}$$

Average production of rice in Bihar & Orissa

$$= \frac{1}{2}\left[\frac{5}{3} \times 18 + \frac{6}{7} \times 8\right] \times 514$$

$$= 9472\frac{2}{7}$$

Difference $= 9472\frac{2}{7} - 8652\frac{1}{3} = 819\frac{20}{21}$

42.(2) Rice produced in U.P. $= \frac{2}{3} \times \frac{13}{100} \times 51400$

What produced in Punjab $= \frac{22}{100} \times 51400$

$\therefore$ Required percentage $= \frac{\left(22 - \frac{26}{3}\right) \times 514}{22 \times 514} \times 100$

$\approx 60.6\%$

43.(1) Rice produced in Punjab $= \frac{5}{4} \times 20 \times 514 = 12850$ ton.

44.(4) Rice produced in A.P. & M.P. together

$$= \left(\frac{8}{9} \times 9 + \frac{2}{1} \times 10\right) \times 514$$

$$= 14392 \text{ ton}$$

$\therefore$ Required Percentage $= \frac{14392}{51400} \times 100 = 28\%$

45.(1) Required ratio $= \dfrac{\frac{6}{7} \times 8}{\frac{5}{4} \times 20} = \frac{48}{175}$.

46.(5) No. of male candidates who qualified in 2010

$$= \frac{(100 - 36)}{100} \times 900 \times \frac{13}{24} = 312$$

No. of male who qualified in 2007

$$= 312 \times \frac{50}{100} = 156$$

Total no. of appeared candidates who qualified in 2007

$$= \frac{156}{2} \times 5 = 390$$

Total no. of appeared candidates in 2007

$$= \frac{390}{50} \times 100 = 780$$

47.(3) No. of qualified male in 2007 $= \frac{4}{7} \times 392 = 224$

No. of qualified male in 2009 $= \frac{3}{7} \times 392 = 168$

No. of appeared candidates in 2007 $= \frac{224}{2} \times 5 \times \frac{1}{50} \times 100 = 1120$

No. of appeared candidates in 2009 $= \frac{168}{4} \times 9 \times \frac{1}{30} \times 100 = 1260$

Required% $= \frac{1120}{1260} \times 100 = 88\frac{8}{9}\%$

48.(4) Let no. of qualified male in 2008 and 2010 = x

Let no. of qualified female in 2008 and 2010 is 3y and 7y respectively.

Then, $x + 3y = 288$ ... (i)

and $x + 7y = 576$ ... (ii)

from (i) and (ii)

$y = 72$

No. of qualified female candidates in 2008 and 2010 together

$= 72(3 + 7) = 720$

49.(1) No. of appeared candidates in 2011 $= \frac{125}{100} \times \frac{60}{100} \times 480 = 360$

No. of appeared candidates who qualified in 2011 $= 576 - 376 = 200$

No. of unqualified females in 2011 $= \frac{3}{10}(360 - 200) = \frac{3}{10} \times 160 = 48$

50.(5) Required % $= \frac{576 - 288}{576} \times 100 = 50\%$.

51.(2) Let the average age of the class be A years. Let the ages of the replaced students be 2x and x years. Total age of the students who are not replaced = (48A – 3x) years.

$$48A - 3x + 36 + 11 = 48\left(A + \frac{1.5}{12}\right) \Rightarrow x = 7$$

52.(2) Cost of the mixture $= \frac{8 + (3 \times 12)}{4} = 11$

8   11.50

11

0.5   3

$\therefore$ Requried ratio is 1 : 6.

53.(4) Speed of the first train = 36 kmph = 10 m/s

It will clear the tunnel in

$$\frac{200 + 300}{10} = 50s$$

Speed of the second train = 18 kmph = 5 m/s

It will clear the tunnel in

$$\frac{100 + 300}{5} = 80s$$

So, the tunnel will be free of traffic in 80s.

54.(1) Ratio of profits of Sameer and Tarun = (9000 × 12) : (12000 × 9) = 1 : 1.

Sameer's share $= \frac{6000}{2} = $Rs.3000.

55.(1) Let, length = x

breadth = y

$x + y = \frac{160}{2}$

$x + y = 80$ ... (a)

and $x - y = 48$ ... (b)

From eqⁿ (a) and eqⁿ (b)

$x = \frac{128}{2} = 64$

and y = 16

Area of square = Area of rectangle

$(\text{edge})^2 = 16 \times 64$

Edge $= 4 \times 8$

Edge of square = 32 m

56.(2) The pattern is :

123 + 11 × 14 = 123 + 154 = 277

277 + 13 × 14 = 277 + 182 = 459

459 + 15 × 14 = 459 + 210 = 669

669 + 17 × 14 = 669 + 238 = 907

907 + 19 × 14 = 907 + 266 = 1173

57.(2) The pattern is :

456.5 - 407 = 49.5

407 - 368.5 = 38.5

368.5 - 341 = 27.5

341 - 324.5 = 16.5

? = 324.5 - 5.5 = 319

58.(1) The pattern is :

23 + 1 × 19.2 = 42.2

42.2 + 2 × 19.2 = 80.6

80.6 + 4 × 19.2 = 157.4

157.4 + 8 × 19.2 = 311

311 + 16 × 19.2 = 311 + 307.2 = 618.2

59.(5) The pattern is :

154 - 36 = 118

232 - 154 = 78

278 - 232 = 46

300 - 278 = 22

118   78   46   22

−40   −32   −24   −16,,, 22 − 16 = 6

? - 300 = 6

? = 306

60.(4) The pattern is : $+8^3, -7^2, +6^3, -5^2, +4^3$ ....
Therefore, $678 + 4^3 = 742$.

61.(2) $\dfrac{36864 \times 24}{64 \times 48} = 288 = \sqrt{?} \Rightarrow ? = 82944$.

62.(4)

63.(1) $278.46 - 158.44 = 120.02$.

64.(3)

65.(1) $\sqrt{11-7} = 2$.

66-70. From first and third line, we can see that there is no grandmother and G is the grandfather and head of this family. That means G would be very old person in this family and he was born in 1973.

Now we can see that there is one condition regarding G and F, that the difference between the ages of G and F is a perfect square. If F was born in 1989 then, difference would be 16 that is a perfect square and if F was born in 2009 then difference would be 36, that is also a perfect square. But it is given in last line that F is one year older than K. But if we consider F born date in 2009, Condition will not follow, So F's year of born will be 1989.

Members	Years
G	1973
F	1989

Now, there is a condition that F is one year older than K. that means K was born in 1990. And D's age is a perfect cube but less than 30 that means we have to find out the real age of all person according to given years. From this we can see that D's age is 8 years. And this 8 years is perfect cube.

Members	Years
G	1973
F	1989
K	1990
D	2009

Now according to given condition, the addition of I's age and J's age is a perfect square and perfect cube. So remaining age is 37 years, 29 years, 33 years and 31 years. In this ages addition we can see that after the addition of 33 years and 31st years, we get 64 that is a perfect squares and perfect cube. That means I and J was born in 1984 and 1986.

Members	Years
G	1973
F	1989
K	1990
D	2009
I	1984/1986
J	1984/1986

Now, E's age is not less than 30 years. That means E's age is 37 years. Means E was born in 1980. There is one more condition, that J is four years younger than E. If E was born in 1980, that means J was born in 1984.

Members	Years
G	1973
F	1989
K	1990
D	2009
I	1986
J	1984
E	1980

Now at last only one person is left with one year born. So,

Members	Years
G	1973
F	1989
K	1990
D	2009
I	1986
J	1984
E	1980
H	1988

66.(4)   **67.(5)**
68.(4)   **69.(4)**   **70.(4)**

71-75. The machine rearranges one number and one word in each step. In step 1st, greatest word according to alphabetical series followed by lowest number from left to right and in step 2nd, lowest word according to alphabetical series followed by greatest number from left to right and so on in each alternative steps.

Input: 52 pain sacrifice fire 46 courage 15 honest 31 73 truth

Step I: truth 15 52 pain sacrifice fire 46 courage honest 31 73

Step II: courage 73 truth 15 52 pain sacrifice fire 46 honest 31

Step III: sacrifice 31 courage 73 truth 15 52 pain fire 46 honest

Step IV: fire 52 sacrifice 31 courage 73 truth 15 pain 46 honest

Step V: pain 46 fire 52 sacrifice 31 courage 73 truth 15 honest

Step VI: honest pain 46 fire 52 sacrifice 31 courage 73 truth 15

71.(2)   **72.(3)**
73.(4)   **74.(2)**   **75.(4)**

76.(1) A starts his journey from point X at 3:40 am (<$).
Total time to cover the distance from point X to Z
= 1:15 + 2:10 hrs = 3:25 hrs
So A will reach at point Z after 3:25 hrs = 7:05 am = **@?**

77.(2) If Ajay takes 1:15 hrs to complete 2km distance then he will take 6:15 hrs to complete 10km distance. 6:15hrs = $*
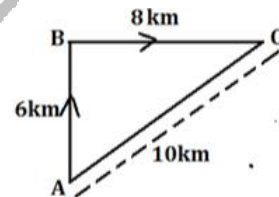
78.(3) T = D / S
T = 7.00 hrs. = <?.

79.(5) Ravi leaves station A at **$?** (7:15 am), he have to reach at station B at 8:15 am = $>.

80.(1) B will take 5hrs to finish a work, he started work at $> = 8.15, it means he will finish a work at 1:15 = $@.

81-82.

81.(2)   **82.(4)**

83.(4)

84.(5)   Both option (2) and option (4), shows 'M ≥ N' definitely true and 'Q < P' being false.

85.(2)

86-90.

Tree Form (Blood Relation):

86.(1)   87.(1)

88.(2)   89.(2)   90.(3)

91-95.   First we start arrangement by making the seating arrangement. R sits third to the left of P and T sits fifth to the right of R. T does not sit at extreme ends. Q and S are immediate neighbour and none of them sits near to T and only one person sits between Q and V, V is not the immediate neighbour of P so Q sits immediate right of R ,V sits immediate left of R. U does not sit at extreme end so U sits immediate right to P and W sits at extreme ends.

It is given that there are three group with one husband and one wife each. U got twice of points which T got so the possibilities are- U = 6 T = 3 or U = 8 T = 4.The difference of points received by T and S is equal to the difference of points of S and R so If we take T = 4, this condition cannot be satisfied. If we take T=3, then S=8 and R=13.

It is given that P and his partner together got points equal to the points of other person. P got points either 10 or 4.If P=4, then his partner is U but U got less than her partner so this is not possible. If P=10, then her partner is T and V got 4 points.S and his partner got points equal to 20 less than the sum of points of all other persons so S and V are partners.

91.(5)   92.(4)

93.(1)   94.(3)   95.(1)

96.(4)   97.(2)

98.(5)   99.(4)   100.(2)