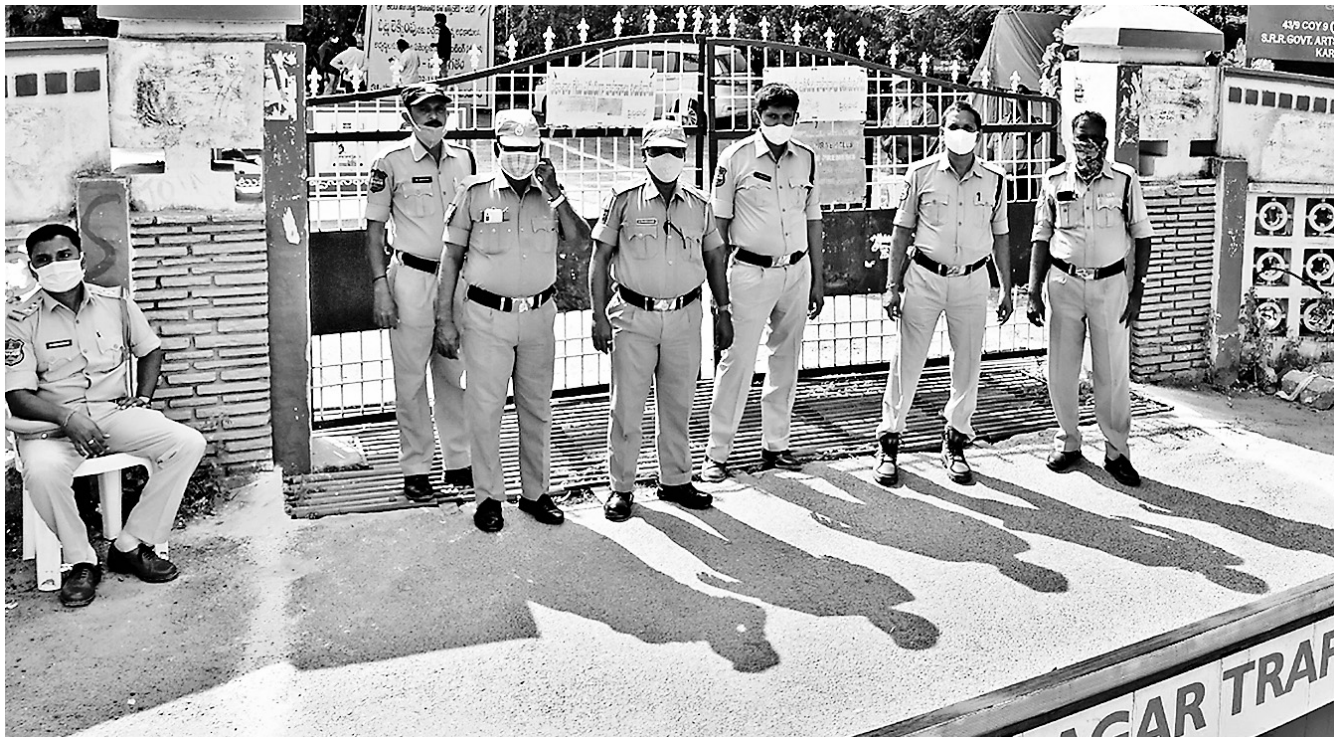


Make time for time and work problems



This article is in continuation to the last article on preparation for the Sub-Inspector of Police recruitment exam. Here are some previous year questions and explanations on the Time and Work topic. To improve calculations speed, the aspirants must practice questions from the previous question papers.

1. A and B undertaken to do a work for Rs 6000. A alone and B alone can do not that in 6 and 8 days respectively. With the help of C, they have finished the work in 3 days. The share of B's is (SI PRE 2018)

- A. Rs 2,400 B. Rs 2,250
C. Rs 2,000 D. Rs 1,500

Ans: B

Explanation:

A = 6 days, B = 8 days
and A + B + C = 3 days
Total work =
LCM of (6, 8, 3) = 24
Efficiency of
(A, B, A + B + C) =
4, 3 and 8
A B C = 8
Efficiency of C = 8 - 4 - 3 = 1
Ratio of efficiency of A, B, C
= 4 : 3 : 1
Total amount = 6000
B's share = $6000 \times \frac{3}{8} = 2250$

2. A piece of work can be completed by A, B and C individually in 12, 8 and 6 hours respectively. All the three worked for two hours at which point of time C left the work. The time (in minutes) taken by the other two to complete the work is:

- (SI PRE 2018)
A. 12 B. 24 C. 62 D. 72

Ans: D

Explanation:

A = 12 hours, B = 8 hours
and C = 6 hours
Total work = LCM of (12, 8, 6)
= 24

Efficiency of (A, B, C) = 2, 3 and 4

The work completed in two hours
= $(2 + 3 + 4) \times 2 = 18$
Remaining work =
 $24 - 18 = 6$ units
Time taken by A and B to complete 2 units of work = $\frac{6}{5}$ hours
= 72 minutes

3. Person A completes a work W_1 in 6 hours while person B completes another work W_2 in 6 hours. If W_2 is only equal to two-thirds of W_1 then the number of hours required for A and B together to complete both W_1 and W_2 is (SI PRE 2018)

- A. 6 B. 7 C. 5 D. 8

Ans: A

Explanation:

Suppose $W_2 = 1$
So, according to the question:
 $W_1 = \frac{2}{3}$
Total work i.e., $W_1 + W_2 = 1 + \frac{2}{3} = \frac{5}{3}$
Work done by A in one hour = $(\frac{2}{3})/6 = \frac{1}{9}$
Work done by B in one hour = $\frac{1}{6}$
Total work done by A and B together in one hour = $\frac{1}{9} + \frac{1}{6} = \frac{5}{18}$
Number of hours required for A and B together = $(\frac{5}{3})/(\frac{5}{18}) = 6$

4. A and B can do a piece of work independently in 12 days and 16 days respectively. They worked together for 4 days and B left the work. How many more days A worked to finish the work? (SI PRE 2018)

- A. 3 B. 4 C. 5 D. 6

Ans: C

Explanation:

A and B's one day's work
= $\frac{1}{16} + \frac{1}{12} = \frac{(3 + 4)}{48} = \frac{7}{48}$
(A + B) 4 day's work = $\frac{7}{48} \times 4 = \frac{7}{12}$
Remaining work $1 - \frac{7}{12} = \frac{5}{12}$
Time taken by A to finish the remaining work = $(\frac{5}{12})/(\frac{1}{12}) = 5$ days

5. Two persons A and B undertake to paint a house for Rs 54,000. A alone can paint the house in 40 days and B alone can paint the house in 45 days. A and B along with a third person C completes painting in 20 days. Then, the share of C is (in rupees) (SI MAINS 2018)

- A. 6000 B. 5000 C. 4000 D. 3000

Ans: D

Explanation:

A = 40 days, B = 45 days and
A + B + C = 20 days
LCM of (A, B, A + B + C) is = 360
Efficiency of
(A, B, A + B + C) = 9, 8 and 18
A B C = 18
Efficiency of C
= 18 - 9 - 8 = 1
Ratio of efficiency of A, B, C = 9 : 8 : 1
Total amount = 54000
C's share = $54000 \times \frac{1}{18} = 3000$



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TO BE CONTINUED...

TSSPDCL issues notification for direct recruitment

The Southern Power Distribution Company of Telangana Limited (TSSPDCL) has issued notification for direct recruitment to 70 Assistant Engineer (Electrical) vacancies. Candidates possessing a bachelor's degree in electrical engineering/electrical and electronics engineering from a recognised university in the country or any other qualification recognised as equivalent thereto or a pass in Section — 'A' & 'B' of the AMIE examination conducted by the Institute of Engineers in Electrical/Electrical and Electronics Engineering are eligible to apply.

Selection is based on the written examination consisting of 100 multiple choice questions with each question carrying one mark. The exam will be conducted for two hours at different centres located in the GHMC area on July 17. A total of 80 questions on the core technical subject are covered in section A, while section B contains 20 questions on general awareness, numerical ability and Telangana history, culture and movement.

Section A covers areas — Engineering Mathematics (Linear Algebra, Calculus, Differential Equations, Complex variables, Probability and Statistics, Numerical Methods and Transform Theory), Electrical Engineering (Electric Circuits, Electromagnetic Fields, Signals and Systems, Electrical Machines, Power Systems, Control Systems, Electrical and Electronics Measurements, Analog and Digital Electronics and Power Electronics).

According to the TSSPDCL, selected candidates will be placed on probation for a period of two years including one-year training. At the time of joining, candidates should deposit their original certificates such as date of birth (SSC), degree, caste and study/residence certificates etc.

During the training cum probation period, candidates will be paid an initial scale of pay of assistant engineer with usual allowances admissible at the place of posting.

Candidates appointed are required to work wherever posted in the jurisdiction of TSSPDCL for a minimum period of three years. For 95 per cent of the posts, preference will be given to the candidates belonging to districts that fall within the jurisdiction of the TSSPDCL. The districts—Mahabubnagar, Wanaparthy, Nagarkurnool, Jogulamba-Gadwal, Narayanpet, Nalgonda, Bhongir, Yadadri, Suryapet, Medak, Siddipet, Sangareddy, Vikarabad, Rangareddy, Medchal-Malkajgiri and Hyderabad fall under the jurisdiction of the TSSPDCL.

The registration for the recruitment exam is underway on the website <https://tssouthernpower.cgg.gov.in/> and the last submission of the online application form is June 3. Each applicant must pay Rs 200 towards the online application processing fee.

This apart, candidates have to pay Rs 120 towards the exam fee. However, the applicants belonging to SC/ST/BC communities, PH and Economically Weaker Sections have been exempted from payment of the examination fee. Hall tickets can be downloaded from the website from July 11.

— Yuvraj Akula