



## (Papers) SSC Junior Engineer Exam Paper - 2018 "held on 27 Jan 2018" Afternoon Shift (Civil Engineering)

**QID : 701** - The crushing strength (MPa) of good stone used for construction of a building must not be less than \_\_\_\_.

**Options:**

- 1) 10
- 2) 50
- 3) 100
- 4) 120

**Correct Answer:** 100

**QID : 702** - In ordinary cement, about 99% of its final strength is achieved in \_\_\_\_.

**Options:**

- 1) 3 days
- 2) 7 days
- 3) 28 days
- 4) 1 year

**Correct Answer:** 28 days

**QID : 703** - In the process of the hydration of OPC, what is the water requirement (expressed as the percentage by weight of cement) to complete the chemical reactions?

**Options:**

- 1) 15 to 25%
- 2) 20 to 25%
- 3) 25 to 35%
- 4) 35 to 45%

**Correct Answer:** 20 to 25%

**QID : 704** - What is the main reason to use lime in the cement slurry during the plastering in the top coat?

**Options:**

- 1) To make the surface bright.
- 2) To harden the cement.
- 3) To make the plaster non-shrinkable.
- 4) To improve the workability of plaster.

**Correct Answer:** To make the plaster non-shrinkable.

**QID : 705** - Bulking of sand occurs in the moisture content of \_\_\_\_\_.

**Options:**

- 1) 3%
- 2) 5%
- 3) 10%
- 4) 12%

**Correct Answer:** 5%

**QID : 706** - Which of the following is the main advantage of the plywood?

**Options:**

- 1) Strength is more in the longitudinal direction.
- 2) Strength is more in the transverse direction.
- 3) Tensile strength is same in all directions.
- 4) Shrinkage stress is minimum.

**Correct Answer:** Tensile strength is same in all directions.

**QID : 707** - The hardwood is produced by which of the following trees?

**Options:**

- 1) Chir
- 2) Kail

- 3) Pine
- 4) Shishum

**Correct Answer:** Shishum

**QID :** 708 - Which one of the following metamorphic rocks has more weathering resistance characteristics?

**Options:**

- 1) Lime stone
- 2) Phyllite
- 3) Quartzite
- 4) Slate

**Correct Answer:** Quartzite

**QID :** 709 - Which of the following type of stone is used in the rubble masonry?

**Options:**

- 1) Hard
- 2) Heavy weighted
- 3) Light weighted
- 4) Smooth

**Correct Answer:** Hard

**QID :** 710 - The hydraulicity of the hydraulic lime is mainly due to \_\_\_\_\_.

**Options:**

- 1) calcium oxide
- 2) clay
- 3) sulphur
- 4) water

**Correct Answer:** clay

**QID :** 711 - What percentage of the cost of the estimate is provided for the work charged establishment?

**Options:**

- 1) 2%
- 2) 8%
- 3) 10%
- 4) 15%

**Correct Answer:** 2%

**QID :** 712 - What is the thickness (inches) of the one brick wall made up of traditional brick?

**Options:**

- 1) 9
- 2) 10
- 3) 18
- 4) 20

**Correct Answer:** 9

**QID :** 713 - Which one is the CORRECT option for the damp proof course?

**Options:**

- 1) It is measured in the cubic meter.
- 2) It is measured in running meter.
- 3) It is not provided at sills of doors.
- 4) It is provided for half the width of the plinth wall.

**Correct Answer:** It is not provided at sills of doors.

**QID :** 714 - Calculate the year's purchase for a property of useful life of 30 years and rate of interest of 5% per annum.

**Options:**

- 1) 0.05
- 2) 0.2
- 3) 2
- 4) 20

**Correct Answer:** 20

**QID :** 715 - What is the density of the mild steel in quintal per cubic meter?

**Options:**

- 1) 7.85
- 2) 78.5
- 3) 490
- 4) 7850

**Correct Answer:** 78.5

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**QID** : 716 - Cleaning and fixing of glass panel is measured in \_\_\_\_\_.

**Options:**

- 1) cubic meter
- 2) meter
- 3) number
- 4) square meter

**Correct Answer:** number

**QID** : 717 - Calculate the volume (cubic meter) of earthwork for an embankment of length 30 m and width 4 m. The mean depth of the embankment is 4 m and side slope is 2 : 1. Using mid-sectional area method.

**Options:**

- 1) 480
- 2) 960
- 3) 1440
- 4) 1920

**Correct Answer:** 1440

**QID** : 718 - Calculate the quantity (cubic meter) of the cement required for 1 cubic meter of brick work with cement mortar (1 : 4).

**Options:**

- 1) 0.05
- 2) 0.06
- 3) 0.2
- 4) 0.24

**Correct Answer:** 0.06

**QID** : 719 - Which one is the CORRECT statement for conversion of the lift into lead?

**Options:**

- 1) Lift up to 3.6 m is converted into the horizontal lead by multiplying with 10.
- 2) Lift up to 3.6 m is converted into horizontal lead by multiplying with 15
- 3) Lift up to 3.6 m is converted into horizontal lead by multiplying with 20
- 4) Lift above 6 m is converted into horizontal lead by multiplying with 10

**Correct Answer:** Lift up to 3.6 m is converted into the horizontal lead by multiplying with 10.

**QID : 720** - A building has been purchased by a person at a cost of Rs. 25,000. The useful life of the building is 40 years and the scrap value of the building is Rs. 3,000. Calculate the annual sinking fund (Rs.) at the rate of 5% interest.

**Options:**

- 1) 136
- 2) 155
- 3) 182
- 4) 207

**Correct Answer:** 182

**QID : 721** - Plumb bob lines at two different places in geodetic surveying will \_\_\_\_\_.

**Options:**

- 1) intersect at the surface of the Earth
- 2) intersect at the center of the Earth
- 3) parallel to each other
- 4) perpendicular to each other

**Correct Answer:** intersect at the center of the Earth

**QID : 722** - Calculate the true reduced level (m) of a point A after correcting the refraction and curvature. The staff reading at the point taken from an instrument set at a distance of 2 km from the point A is 2.56 m. The staff reading from the same station on a bench mark of reduced level is 100 m is 1.34 m.

**Options:**

- 1) 98.51
- 2) 99.78
- 3) 99.05
- 4) 101.3

**Correct Answer:** 99.05

**QID : 723** - Which one is the CORRECT expression for the horizontal distance between the instrument and the staff for the anallactic telescope, if S is the staff intercept, K and C are multiplying and additive constant?

**Options:**

- 1) C
- 2) 100C
- 3) S

4) 100S

**Correct Answer:** 100S

**QID :** 724 - With an increase in the denominator of the representative fraction, the scale of the map will \_\_\_\_\_.

**Options:**

- 1) decrease
- 2) either decrease or increase
- 3) increase
- 4) remain same

**Correct Answer:** decrease

**QID :** 725 - Calculate the length of one division of the vernier scale, if least count of the combination of main and vernier scale is 0.02 mm. The least count of the main scale is 1 mm.

**Options:**

- 1) 1
- 2) 0.98
- 3) 1.02
- 4) 1.03

**Correct Answer:** 0.98

**QID :** 726 - Which one is the CORRECT statement?

**Options:**

- 1) Length of engineering chain is 33 ft.
- 2) Length of engineering chain is 66 ft.
- 3) Length of Gunter's chain is 66 ft.
- 4) Length of revenue chain is 33 ft.

**Correct Answer:** Length of Gunter's chain is 66 ft.

**QID :** 727 - Which of the following statement is CORRECT for whole circle bearing?

**Options:**

- 1) It is always measured in anticlockwise direction.
- 2) It is always measured in anticlockwise direction from south end of the reference.
- 3) It is always measured in clockwise direction from south end of the reference.
- 4) It is always measured from north end of the reference.

**Correct Answer:** It is always measured from north end of the reference.

**QID :** 728 - Calculate the length (m) tangent of a 5 degree curve, if the deflection angle is 60 degree.

**Options:**

- 1) 172.5
- 2) 198.6
- 3) 360
- 4) 596

**Correct Answer:** 198.6

**QID :** 729 - Calculate the limiting length (m) of the offset, if the maximum allowable error in laying offset is 2 degree. The scale of the map is 1 cm = 100 m.

**Options:**

- 1) 2.5
- 2) 71.63
- 3) 250
- 4) 2865

**Correct Answer:** 71.63

**QID :** 730 - Calculate the error in the staff reading on a staff at a distance of 100 m due to out of the center of the bubble by 4 divisions. The sensitivity of the bubble tube is 30 seconds per 2 mm divisions

**Options:**

- 1) 0.29
- 2) 0.34
- 3) 0.58
- 4) 0.67

**Correct Answer:** 0.58

**QID :** 731 - For which of the following soil, plasticity index is maximum?

**Options:**

- 1) Clay
- 2) Cobble
- 3) Gravel
- 4) Silt

**Correct Answer:** Clay

**QID :** 732 -

Options:

- 1) 15
- 2) 22
- 3) 26
- 4) 30

**Correct Answer:** 22

**QID :** 733 -

Options:

- 1)
- 2)
- 3)
- 4)

**Correct Answer:**

**QID :** 734 - For bulk heads, which of the following earth pressure theory is applied directly?

**Options:**

- 1) Coulomb's theory
- 2) Rankine's theory
- 3) Coulomb's theory and Rankine's theory both
- 4) None of these

**Correct Answer:** None of these

**QID :** 735 - On increasing the temperature of a liquid, the viscosity of the liquid \_\_\_\_\_.

**Options:**

- 1) decrease
- 2) increase
- 3) first decrease and then increase
- 4) remains same

**Correct Answer:** decrease

**QID : 736 -** Which of the following represents the unit of kinematic viscosity?

**Options:**

- 1)
- 2)
- 3)
- 4)

**Correct Answer:**

**QID : 737 -**

**Options:**

- 1) 1.5
- 2) 1.96
- 3) 2.76
- 4) 3

**Correct Answer:** 1.96

**QID : 738 -**

**Options:**

- 1) 5

- 2) 6.43
- 3) 8.95
- 4) 10

**Correct Answer:** 6.43

**QID :** 739 - A turbine generates the power of 150,000 kW while working at the speed of 300 rpm at the head of 100 m. What is the specific speed of the turbine?

**Options:**

- 1) 300
- 2) 340
- 3) 367
- 4) 452

**Correct Answer:** 367

**QID :** 740 - Which of the following represent the Darcy's friction factor in terms of Reynolds number (Re) for the laminar flow in circular pipes?

**Options:**

- 1)  $16/Re$
- 2)  $32/Re$
- 3)  $64/Re$
- 4) None of these

**Correct Answer:**  $64/Re$

**QID :** 741 - Which of the following represents the maximum thickness of the boundary layer in the pipe having radius R?

**Options:**

- 1) 0
- 2)  $R/2$
- 3) R
- 4)  $2R$

**Correct Answer:** R

**QID :** 742 - Which of the following represents the speed of the elementary wave in the still water at a depth of y?

**Options:**

- 1)
- 2)
- 3)
- 4)

**Correct Answer:**

**QID :** 743 - What is the specific energy (m-kg/kg) for 1 m depth of flow having velocity of 3 m/s?

**Options:**

- 1) 0.54
- 2) 1.46
- 3) 5
- 4) 7.62

**Correct Answer:** 1.46

**QID :** 744 - In the Sutro weir, the discharge of the weir is proportional to \_\_\_\_\_.

**Options:**

- 1)
- 2)
- 3)
- 4) H

**Correct Answer:** H

**QID :** 745 - Watering done prior to the sowing of the crops is called \_\_\_\_\_.

**Options:**

- 1) kor watering
- 2) duty
- 3) delta
- 4) paleo irrigation

**Correct Answer:** paleo irrigation

**QID :** 746 - Calculate the runoff (cm) from a rainfall of 3 hours. The intensity of the rainfall is 2 cm/hr. The evaporation and infiltration losses are 8 mm and 16 mm respectively.

**Options:**

- 1) 1.2
- 2) 2.8
- 3) 3.6
- 4) 6.8

**Correct Answer:** 3.6

**QID :** 747 - Calculate the design rate of super elevation (%) on a highway in a plain terrain, if design speed of the highway is 80 kmph and radius of the curve is 400m.

**Options:**

- 1) 7
- 2) 7.11
- 3) 8.2
- 4) 12.6

**Correct Answer:** 7

**QID :** 748 - The width (m) of the narrow gauge is \_\_\_\_\_.

**Options:**

- 1) 0.762
- 2) 1
- 3) 1.435
- 4) 1.676

**Correct Answer:** 0.762

**QID :** 749 - On which scale the turbidity is measured?

**Options:**

- 1) Platinum scale

- 2) Silica cobalt scale
- 3) Silica platinum scale
- 4) Standard silica scale

**Correct Answer:** Standard silica scale

**QID :** 750 -

Options:

- 1) 500 to 750
- 2) 800 to 1200
- 3) 1200 to 1550
- 4) 1650 to 2500

**Correct Answer:** 500 to 750

**QID :** 751 - Which of the following structural loads are not applied commonly to a building?

**Options:**

- 1) Dead load
- 2) Rain load
- 3) Live load
- 4) Environmental load

**Correct Answer:** Rain load

**QID :** 752 - In the method used to establish the magnitude of live load, what is the reference time period?

**Options:**

- 1) 30 years
- 2) 40 years
- 3) 50 years
- 4) 60 years

**Correct Answer:** 50 years

**QID :** 753 - Find the value of reduction factor  $R_2$  if  $F$  (rise to span ratio in inches) is given to be 5.

**Options:**

- 1) 0.95

2) 0.96

3) 0.97

4) 0.98

**Correct Answer:** 0.95

**QID :** 754 - How many constraints are there in a free-rotation support used in a planar system?

**Options:**

1) 1

2) 2

3) 3

4) 4

**Correct Answer:** 2

**QID :** 755 - A surface structure has:-

**Options:**

1) Small thickness

2) Large thickness

3) Moderate thickness

4) Arbit thickness

**Correct Answer:** Small thickness

**QID :** 756 - If in a planar system, only 2 reaction forces are acting, then the system is:-

**Options:**

1) Essentially unstable

2) Essentially stable

3) Can't say

4) None of these

**Correct Answer:** Essentially unstable

**QID :** 757 - If a structure has total 10 joints, then what should be the minimum no. of joints in which equilibrium equations should be concurrently satisfied for stability?

**Options:**

1) 7

2) 8

3) 9

4) 10

**Correct Answer:** 10

**QID :** 758 -

**Options:**

1) Only A

2) Only B

3) Only C

4) Only D

**Correct Answer:** Only B

**QID :** 759 - Generally, in a truss system compressive parts are thicker than tensile parts. Is it true or false?

**Options:**

1) TRUE

2) FALSE

3) Can't say

4) Depends upon situation

**Correct Answer:** TRUE

**QID :** 760 - If a truss has two more members surpassing each other, then it is:-

**Options:**

1) Simple

2) Compound

3) Complex

4) None of these

**Correct Answer:** Complex

**QID :** 761 - How many components are mainly used to prepare concrete?

**Options:**

1) 5

2) 3

3) 2

4) 4

**Correct Answer:** 4

**QID :** 762 - Retarders are used for:

**Options:**

1) Construction of high rise building

2) Repair works

3) Cold weather conditions

4) Grouting deep oil wells

**Correct Answer:** Grouting deep oil wells

**QID :** 763 - What is the ratio of components in grade M20 concrete?

A. 1:3:6

B. 1:1.5:3

C. 1:1:2

D. 1:2:4

**Options:**

1) Only A

2) Only B

3) Only C

4) Only D

**Correct Answer:** Only B

**QID :** 764 - How many types of machine mixers of concrete are available?

**Options:**

1) 2

2) 5

3) 6

4) 3

**Correct Answer:** 3

**QID :** 765 - Excess vibration during compacting of concrete can lead to:

**Options:**

1) Bleeding

- 2) Segregation
- 3) High strength
- 4) Air bubbles

**Correct Answer:** Segregation

**QID :** 766 - Which of the below property of aggregates is not desirable?

**Options:**

- 1) Smooth texture
- 2) Well graded
- 3) Angular shape
- 4) Smaller size

**Correct Answer:** Angular shape

**QID :** 767 - Which of the following statements is true?

- A. Workability reduces with time.
- B. Workability does not reduce with time.
- C. Workability remains constant with time.

**Options:**

- 1) Only A
- 2) Only B
- 3) Only C
- 4) None of these

**Correct Answer:** Only A

**QID :** 768 -

**Options:**

- 1) Only A
- 2) Only B
- 3) Only C
- 4) Only D

**Correct Answer:** Only B

**QID :** 769 - The result of Vee-Bee test is expressed in terms of:

**Options:**

- 1) s
- 2) m
- 3) N/mm<sup>2</sup>
- 4) kg

**Correct Answer:** s

**QID :** 770 - Plastering is also called:

**Options:**

- 1) Pre-casting
- 2) Pargeting
- 3) Porting
- 4) Polishing

**Correct Answer:** Pargeting

**QID :** 771 - In plastering, the 1st coat is called \_\_\_\_\_ and its thickness should be \_\_\_\_\_ mm.

**Options:**

- 1) Undercoat, 6-9
- 2) Floating coat, 6-9
- 3) Floating coat, 10-15
- 4) Undercoat, 10-15

**Correct Answer:** Undercoat, 10-15

**QID :** 772 - Which of the following statements is true?

- A. Mud plastering does not require curing
- B. Mud plastering requires curing.
- C. It depends on the situation

**Options:**

- 1) Only A
- 2) Only B
- 3) Only C
- 4) None of these

**Correct Answer:** Only A

**QID : 773** - Which of the following statements is true?

**Options:**

- 1) The quality of water governs the strength of concrete
- 2) The quantity of water required for concreting, depends upon the grading of aggregate and method of compaction
- 3) 10% excess of water reduces the strength of concrete by 15%
- 4) All option are correct

**Correct Answer:** All option are correct

**QID : 774** - In the method of voids for determination of the quantity of cement paste, it is assumed that

**Options:**

- 1) Voids in coarse aggregates are filled by fine aggregates
- 2) Voids in fine aggregates are filled by the cement paste
- 3) Volume of fine aggregates is equal to total voids in coarse aggregates plus 10% extra
- 4) All option are correct

**Correct Answer:** All option are correct

**QID : 775** - The 28 days' cube strength of mass concrete using aggregates of maximum size 5 cm for gravity dams should be:

**Options:**

- 1) between 150 to 300 kg/sq.cm
- 2) between 350 to 600 kg/sq.cm
- 3) between 150 to 500 kg/sq.cm
- 4) below 200 kg/sq.cm

**Correct Answer:** below 200 kg/sq.cm

**QID : 776** - What do you mean by 'Ware house pack' of cement?

**Options:**

- 1) full capacity of the warehouse
- 2) pressure exertion of the bags of upper layers
- 3) pressure compaction of the bags on lower layers
- 4) packing the ware house

**Correct Answer:** pressure compaction of the bags on lower layers

**QID : 777** - Which of the following refers to the process of proper and accurate measurement of concrete ingredients for uniformity of proportion?

**Options:**

- 1) grading
- 2) curing
- 3) Mixing
- 4) batching

**Correct Answer:** batching

**QID : 778** - What are the dimensions of a 35-liter forma for measuring aggregates by volume?

**Options:**

- 1) length 30 cm, breadth 25 cm, height 30 cm
- 2) length 39 cm, breadth 25 cm, height 32 cm
- 3) length 27 cm, breadth 27 cm, height 48 cm
- 4) length 220 cm, breadth 25 cm, height 40 cm

**Correct Answer:** length 27 cm, breadth 27 cm, height 48 cm

**QID : 779** - In how many types can R.C.C. be classified into?

**Options:**

- 1) 2
- 2) 3
- 3) 4
- 4) 5

**Correct Answer:** 2

**QID : 780** - R.C.C. was developed and first used by:

**Options:**

- 1) Joseph Monier
- 2) John Smeaton
- 3) Francois Coignet
- 4) Joseph Asphadin

**Correct Answer:** Francois Coignet

**QID : 781** - Which of the below is not a property of ferro cement?

**Options:**

- 1) Impervious nature
- 2) Capacity to resist shock
- 3) No need of formwork
- 4) Strength per unit mass is low

**Correct Answer:** Strength per unit mass is low

**QID :** 782 -

**Options:**

- 1) A Only
- 2) B Only
- 3) C Only
- 4) D Only

**Correct Answer:** C Only

**QID :** 783 - If the ratio of the span to the overall depth does not exceed 10, the stiffness of the beam will ordinarily be satisfactory in case of a

**Options:**

- 1) simply supported beam
- 2) continuous beam
- 3) cantilever beam
- 4) None of these

**Correct Answer:** cantilever beam

**QID :** 784 -

**Options:**

- 1) a rectangle whose height is equal to the effective span
- 2) a rectangle whose height is equal to the height of the slab above lintel
- 3) a rectangle whose height is equal to the height of the wall above the lintel
- 4) equilateral triangle of side L and the load between lintel and slab

**Correct Answer:** equilateral triangle of side L and the load between lintel and slab

**QID : 785** - The maximum permissible size of aggregates to be used in casting the ribs of a slab is

**Options:**

- 1) 5 mm
- 2) 7.5 mm
- 3) 10 mm
- 4) 15 mm

**Correct Answer:** 10 mm

**QID : 786** - For a number of columns constructed in a row, the type of foundation provided is

**Options:**

- 1) footing
- 2) raft
- 3) strap
- 4) strip

**Correct Answer:** strip

**QID : 787** -

**Options:**

- 1) A Only
- 2) B Only
- 3) C Only
- 4) D Only

**Correct Answer:** B Only

**QID : 788** -

**Options:**

- 1) A Only
- 2) B Only
- 3) C Only
- 4) D Only

**Correct Answer:** C Only

**QID :** 789 -

**Options:**

- 1) A Only
- 2) B Only
- 3) C Only
- 4) D Only

**Correct Answer:** C Only

**QID :** 790 - Total strain energy theory for the failure of a material at elastic limit is known as

**Options:**

- 1) Guest's or Tresca's theory
- 2) St.Venant's theory
- 3) Rankine's theory
- 4) Haig's theory

**Correct Answer:** Haig's theory

**QID :** 791 -

**Options:**

- 1) supporting reactions only
- 2) shear forces only
- 3) bending moments only
- 4) All option are correct

**Correct Answer:** All option are correct

**QID :** 792 -

**Options:**

- 1) [1] Only
- 2) [2] Only

3) [3] Only

4) [4] Only

**Correct Answer:** [2] Only

**QID :** 793 - Which of the following statements is true?

**Options:**

1) The ability of the material to absorb energy till the breaking or rupture taken place is known as hardness

2) The ability of the material to absorb energy till the breaking or rupture taken place is known as Toughness

3) The ability of the material to absorb energy till the breaking or rupture taken place is known as brittleness

4) None of these

**Correct Answer:** The ability of the material to absorb energy till the breaking or rupture taken place is known as Toughness

**QID :** 794 - The one that has least carbon content is:

**Options:**

1) Wrought iron

2) Cast iron

3) Mild steel

4) Pig steel

**Correct Answer:** Wrought iron

**QID :** 795 - The modulus of elasticity of steel is more than that of concrete. It indicates that steel is

**Options:**

1) less elastic

2) more plastic

3) less plastic

4) None of these

**Correct Answer:** None of these

**QID :** 796 - Which of the following statements is true?

**Options:**

- 1) Limit of proportionality depends upon area of cross-section
- 2) Limit of proportionality depends upon type of loading
- 3) Limit of proportionality depends upon type of material
- 4) All option are correct

**Correct Answer:** Limit of proportionality depends upon type of material

**QID : 797** - In a thin cylindrical shell, the ratio of longitudinal stress to hoop stress is

**Options:**

- 1) 1.5
- 2) 1
- 3) 2
- 4) None of these

**Correct Answer:** None of these

**QID : 798** - Which of the following statements is true?

**Options:**

- 1) Shear stress on principal planes is zero.
- 2) Shear stress on principal planes is maximum
- 3) Shear stress on principal planes is minimum.
- 4) None of these

**Correct Answer:** Shear stress on principal planes is zero.

**QID : 799** - The net area of round bars to resist the tension, is the area of cross section at

**Options:**

- 1) mid-section
- 2) root of the thread
- 3) difference of mid-section and root of the thread
- 4) None of these

**Correct Answer:** root of the thread

**QID : 800** - Pick up the correct statement from the following:

**Options:**

- 1) When the gauge distance is larger than the pitch, the failure of the section may occur in a zig-zag line

- 2) When the gauge distance is smaller than the pitch, the failure of the section may occur in a straight right angle section through the centre of rivet holes
- 3) When the gauge distance and pitch are both equal, the failure to the section becomes more likely as the diameter of the hole increases
- 4) All options are correct

**Correct Answer:** All options are correct

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