

# National Testing Agency

**Question Paper Name :** PGQP56 24th Sep 2021 Shift 2  
**Subject Name :** PGQP56  
**Creation Date :** 2021-09-24 20:00:35  
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**Total Marks :** 400  
**Display Marks:** Yes

## PGQP56

**Group Number :** 1  
**Group Id :** 864351347  
**Group Maximum Duration :** 0  
**Group Minimum Duration :** 120  
**Show Attended Group? :** No  
**Edit Attended Group? :** No  
**Break time :** 0  
**Group Marks :** 400  
**Is this Group for Examiner? :** No

## PART A - General

**Section Id :** 8643511238  
**Section Number :** 1  
**Section type :** Online  
**Mandatory or Optional :** Mandatory

<b>Number of Questions :</b>	25
<b>Number of Questions to be attempted :</b>	25
<b>Section Marks :</b>	100
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	8643511471
<b>Question Shuffling Allowed :</b>	Yes

**Question Number : 1 Question Id : 86435130430 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Select the correct option :

You may feel relieved when something bad \_\_\_\_\_.

1. happens
2. does not happen
3. is remembered
4. occurs

**Options :**

864351106171. 1

864351106172. 2

864351106173. 3

864351106174. 4

**Question Number : 2 Question Id : 86435130431 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Select the most suitable synonym :

BARBARIAN

1. impolite
2. unkind
3. uncivilized
4. unlikeness

**Options :**

864351106175. 1

864351106176. 2

864351106177. 3

864351106178. 4

**Question Number : 3 Question Id : 86435130432 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which is the closest meaning of the phrase *to be hard of hearing* ?

1. deaf
2. deaf and dumb
3. careless
4. arrogant

**Options :**

864351106179. 1

864351106180. 2

864351106181. 3

864351106182. 4

**Question Number : 4 Question Id : 86435130433 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Identify the meaning of the idiom from the options given :

In black and white

1. useless
2. in short
3. in writing
4. in full swing

**Options :**

864351106183. 1

864351106184. 2

864351106185. 3

864351106186. 4

**Question Number : 5 Question Id : 86435130434 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Select the most suitable antonym :

RAPTURE

1. despair
2. elation
3. ecstasy
4. hell

**Options :**

864351106187. 1

864351106188. 2

864351106189. 3

864351106190. 4

**Question Number : 6 Question Id : 86435130435 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Complete the second sentence by selecting the appropriate option :

One way to improve your health is to eat more fruit and vegetables.  
Alternatively \_\_\_\_\_ .

1. you could fall ill
2. you could go on diet
3. you could exercise more
4. you could increase risk of your heart disease

**Options :**

864351106191. 1

864351106192. 2

864351106193. 3

864351106194. 4

**Question Number : 7 Question Id : 86435130436 Question Type : MCQ Option Shuffling : No Is  
Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Fill in the blank with right word :

An employee might be given a privilege as a form of \_\_\_\_\_ .

1. punishment
2. reward
3. increment
4. commendation

**Options :**

864351106195. 1

864351106196. 2

864351106197. 3

864351106198. 4

**Question Number : 8 Question Id : 86435130437 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Select the correct option for use of 'the' :

1. the Delhi
2. the city of Delhi
3. the southern India
4. the long island

**Options :**

864351106199. 1

864351106200. 2

864351106201. 3

864351106202. 4

**Question Number : 9 Question Id : 86435130438 Question Type : MCQ Option Shuffling : No Is**

**Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Fill in the blank with correct preposition :

I am worried \_\_\_\_\_ exam.

1. on
2. in
3. about
4. of

**Options :**

864351106203. 1

864351106204. 2

864351106205. 3

864351106206. 4

**Question Number : 10 Question Id : 86435130439 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Identify the meaning of the idiom from the options given :

Hit the road

1. end the journey
2. an accident
3. begin the journey
4. happy times

**Options :**

864351106207. 1

864351106208. 2

864351106209. 3

864351106210. 4

**Question Number : 11 Question Id : 86435130440 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What will come in place of the question mark (?) in the expression?

$$4003 \times 77 - 21015 = ? \times 116$$

1. 2467
2. 2476
3. 2477
4. 2478

**Options :**

864351106211. 1

864351106212. 2

864351106213. 3

864351106214. 4

**Question Number : 12 Question Id : 86435130441 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Given below are two statements, one is labelled as Assertion A and the other is labelled as Reason R :

**Assertion A** : For making statues, we are using bronze.

**Reason R** : Through the mixing of copper and tin, we produce bronze.

In the light of the above statements, choose the *most appropriate answer* from the options given below.

1. Both **A** and **R** are correct and **R** is the correct explanation of **A**
2. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**
3. **A** is correct but **R** is not correct
4. **A** is not correct but **R** is correct

**Options :**

864351106215. 1

864351106216. 2

864351106217. 3

864351106218. 4

**Question Number : 13 Question Id : 86435130442 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The sum of five numbers is 260. The average of the first two numbers is 30 and the average of the last two numbers is 70. What is the third number?

1. 40
2. 50
3. 55
4. 60

**Options :**

864351106219. 1

864351106220. 2



864351106221. 3

864351106222. 4

**Question Number : 14 Question Id : 86435130443 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Thirty-six workers can finish a piece of work in 14 days. If the work is to be completed in 8 days, how many extra workers are required?

1. 20

2. 23

3. 27

4. 29

**Options :**

864351106223. 1

864351106224. 2

864351106225. 3

864351106226. 4

**Question Number : 15 Question Id : 86435130444 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What should come in the blank space in the following number series?

0, 2, \_\_\_\_\_, 18, 32, 50

1. 5

2. 6

3. 7

4. 8

**Options :**

864351106227. 1

864351106228. 2

864351106229. 3

864351106230. 4

**Question Number : 16 Question Id : 86435130445 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Three of the following four are alike in certain way based on the English alphabetical series and so form a group. Which is the one that does not belong to that group?

1. WXST
2. HCDE
3. QRMN
4. IJEF

**Options :**

864351106231. 1

864351106232. 2

864351106233. 3

864351106234. 4

**Question Number : 17 Question Id : 86435130446 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

If every alternate Saturdays and all Sundays are holidays in a 30 days month beginning on Saturday, then how many working days are there in that month?

1. 21
2. 22
3. 23
4. 24

**Options :**

864351106235. 1

864351106236. 2

864351106237. 3

864351106238. 4

**Question Number : 18 Question Id : 86435130447 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Pointing to a woman in the photograph, Neetu said, "Her son's father is the son-in-law of my mother". How is Neetu related to the woman?

1. Mother
2. Sister
3. Aunt
4. Mother-in-law

**Options :**

864351106239. 1

864351106240. 2

864351106241. 3

864351106242. 4

**Question Number : 19 Question Id : 86435130448 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Suneeta travelled 5 km towards east direction. She turned right and went for 3 km. Then she turned west and travelled for 1 km. How far is she from the starting point?

1. 3 km
2. 5 km
3. 9 km
4. 10 km

**Options :**

- 864351106243. 1
- 864351106244. 2
- 864351106245. 3
- 864351106246. 4

**Question Number : 20 Question Id : 86435130449 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In a certain code, TEMPORAL is written as OLDSMBSP. How is CONSIDER written in that code?

- 1. RMNBSFEJ
- 2. BNMRSFEJ
- 3. RMNBJEFS
- 4. TOPDQDCH

**Options :**

- 864351106247. 1
- 864351106248. 2
- 864351106249. 3
- 864351106250. 4

**Question Number : 21 Question Id : 86435130450 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Whose creations are *Harshacharita* and *Kadambari*?

- 1. Kalhana
- 2. Panini
- 3. Banabhatta
- 4. Patanjali

**Options :**

864351106251. 1

864351106252. 2

864351106253. 3

864351106254. 4

**Question Number : 22 Question Id : 86435130451 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Present-day Istanbul in Turkey was earlier known as

1. Ankara
2. Ottoman
3. Constantinople
4. Byzantine

**Options :**

864351106255. 1

864351106256. 2

864351106257. 3

864351106258. 4

**Question Number : 23 Question Id : 86435130452 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Space X is

1. an Indian autogiant
2. a movie on space
3. name of a spy agency
4. an American private space company

**Options :**

864351106259. 1

864351106260. 2

864351106261. 3

864351106262. 4

**Question Number : 24 Question Id : 86435130453 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

UN day is celebrated on

1. 26th November
2. 24th November
3. 26th October
4. 24th October

**Options :**

864351106263. 1

864351106264. 2

864351106265. 3

864351106266. 4

**Question Number : 25 Question Id : 86435130454 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The famous novel, *Middlemarch* was written by

1. George Eliot
2. William Wordsworth
3. William Shakespeare
4. Ruskin Bond

**Options :**

864351106267. 1

864351106268. 2

864351106269. 3

864351106270. 4

## PART B - WATER RESOURCE DEVELOPMENT AND MANAGEMENT

Section Id :	8643511239
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	75
Number of Questions to be attempted :	75
Section Marks :	300
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	8643511472
Question Shuffling Allowed :	Yes

Question Number : 26 Question Id : 86435130455 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A is an upper triangular with all diagonal entries zero, then  $I+A$  is

1. invertible
2. idempotent
3. singular
4. nilpotent

Options :

864351106271. 1

864351106272. 2

864351106273. 3

864351106274. 4

Question Number : 27 Question Id : 86435130456 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A is a  $5 \times 5$  matrix over  $R$ , then  $(t^2 + 1)(t^2 + 2)$

1. is a minimal polynomial
2. is a characteristics polynomial
3. Both (1) and (2) are true
4. None of (1) and (2) is true

Options :

864351106275. 1

864351106276. 2

864351106277. 3

864351106278. 4

Question Number : 28 Question Id : 86435130457 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

A is a 4-square matrix and  $A^5 = 0$ , then

1.  $A^4 = I$
2.  $A^4 = A$
3.  $A^4 = 0$
4.  $A^4 = -I$

Options :

864351106279. 1

864351106280. 2

864351106281. 3

864351106282. 4



Question Number : 29 Question Id : 86435130458 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

$$A = \begin{pmatrix} 0 & 1 \\ 0 & 0 \end{pmatrix}, \text{ then}$$

1. A has zero image
2. A is nilpotent
3. A is idempotent
4. All of these

**Options :**

864351106283. 1

864351106284. 2

864351106285. 3

864351106286. 4

Question Number : 30 Question Id : 86435130459 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

If a square matrix of order 10 has exactly 5 distinct eigen values, then the degree of the minimal polynomial is

1. at least 5
2. at most 5
3. always 5
4. exactly 10

**Options :**

864351106287. 1

864351106288. 2

864351106289. 3

864351106290. 4

**Question Number : 31 Question Id : 86435130460 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Let  $u, v, w$  be three non-zero vectors which are linearly independent, then

1.  $u$  is linear combination of  $v$  and  $w$
2.  $v$  is linear combination of  $u$  and  $w$
3.  $w$  is linear combination of  $u$  and  $v$
4. None of these

**Options :**

864351106291. 1

864351106292. 2

864351106293. 3

864351106294. 4

**Question Number : 32 Question Id : 86435130461 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The eigen values of a skew-symmetric matrix are

1. negative
2. real
3. absolute value of 1
4. purely imaginary or zero

**Options :**

864351106295. 1

864351106296. 2

864351106297. 3

864351106298. 4

**Question Number : 33 Question Id : 86435130462 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is not a type of matrix?

1. Square Matrix
2. Scalar Matrix
3. Trace Matrix
4. Term Matrix

**Options :**

864351106299. 1

864351106300. 2

864351106301. 3

864351106302. 4

**Question Number : 34 Question Id : 86435130463 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is the correct method to solve matrix equations?

1. Row Echelon Form
2. Inverse of a Matrix
3. Both (1) and (2)
4. None of these

**Options :**

864351106303. 1

864351106304. 2

864351106305. 3

864351106306. 4

**Question Number : 35 Question Id : 86435130464 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Singular matrix is

1. non-invertible
2. invertible
3. both non-invertible and invertible
4. None of these

**Options :**

864351106307. 1

864351106308. 2

864351106309. 3

864351106310. 4

**Question Number : 36 Question Id : 86435130465 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The most frequent observation in a data set is called

1. mode
2. median
3. range
4. mean

**Options :**

864351106311. 1

864351106312. 2

864351106313. 3

864351106314. 4

**Question Number : 37 Question Id : 86435130466 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The median in the set 6, 4, 2, 3, 4, 5, 5, 4 would be

1. 3
2. 6
3. 5
4. 4

**Options :**

864351106315. 1

864351106316. 2

864351106317. 3

864351106318. 4

**Question Number : 38 Question Id : 86435130467 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

A bullock drawn desi plough is working at 2.4 KMPH and cutting soil 20 cm deep and 20 cm wide furrow at top. Calculate the volume of soil cut in 5h.

1. 248 m<sup>3</sup>
2. 219 m<sup>3</sup>
3. 240 m<sup>3</sup>
4. 200 m<sup>3</sup>

**Options :**

864351106319. 1

864351106320. 2

864351106321. 3

864351106322. 4

**Question Number : 39 Question Id : 86435130468 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

A pair of bullocks exert 100 kg pull at  $30^\circ$  to the horizontal while making a V-shape furrow 15 cm wide and 5 cm deep. The speed of ploughing is 3 KMPH. What is the unit draft on the implement and horsepower developed by the bullocks?

1. 2.31 kg/cm<sup>2</sup>; 0.96 HP
2. 2.11 kg/cm<sup>2</sup>; 0.86 HP
3. 2.56 kg/cm<sup>2</sup>; 0.98 HP
4. 3.11 kg/cm<sup>2</sup>; 0.76 HP

**Options :**

864351106323. 1

864351106324. 2

864351106325. 3

864351106326. 4

**Question Number : 40 Question Id : 86435130469 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which share has the disadvantage of replacing the entire share if it gets worn out?

1. Bar point share
2. Shin share
3. Slipnose share
4. Slip share

**Options :**

864351106327. 1

864351106328. 2

864351106329. 3

864351106330. 4

**Question Number : 41 Question Id : 86435130470 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Quarter turn drive implies

1. Cross run
2. Open run
3. Run only in one direction
4. Do not run

**Options :**

864351106331. 1

864351106332. 2

864351106333. 3

864351106334. 4

**Question Number : 42 Question Id : 86435130471 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Slide rail is associated to

1. Completion of angle stroke
2. Detonation
3. Tightening of belt
4. Power transmission at 90° angle

**Options :**

864351106335. 1

864351106336. 2

864351106337. 3

864351106338. 4

**Question Number : 43 Question Id : 86435130472 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Determine the length of the chain having 200 mm pitch and is used for speed reduction from 340 rpm to 120 rpm. The numbers of teeth on driving and driven sprockets are 20 and 40 respectively. The centre to centre distance between 2 sprockets is 540 mm and diameter of driven sprocket is 450 mm.

1. 5.145 m
2. 4.145 m
3. 3.145 m
4. 2.145 m

**Options :**

864351106339. 1

864351106340. 2

864351106341. 3

864351106342. 4

**Question Number : 44 Question Id : 86435130473 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In chain drives, for higher speed and loads, suitable chains to be used are

1. Pintle chain
2. Sprocket chain
3. Roller chain
4. Hook-link chain

**Options :**

864351106343. 1

864351106344. 2

864351106345. 3



864351106346. 4

**Question Number : 45 Question Id : 86435130474 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Pintle chains are made of

1. Roller links
2. Sprockets
3. Pintle
4. Malleable links

**Options :**

864351106347. 1

864351106348. 2

864351106349. 3

864351106350. 4

**Question Number : 46 Question Id : 86435130475 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Pitch length of standard chain number 40 is

1. 1.3 cm
2. 2.3 cm
3. 3.3 cm
4. 4.3 cm

**Options :**

864351106351. 1

864351106352. 2

864351106353. 3

864351106354. 4

**Question Number : 47 Question Id : 86435130476 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Example of mobile power is

1. Sprayers as stationary
2. Sprayers as self-propelled
3. Both (1) and (2)
4. None of the above

**Options :**

864351106355. 1

864351106356. 2

864351106357. 3

864351106358. 4

**Question Number : 48 Question Id : 86435130477 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Shear stress is due to

1. Tension
2. Compression
3. A tendency to prevent sliding of one body over the other
4. All of these

**Options :**

864351106359. 1

864351106360. 2

864351106361. 3

864351106362. 4

**Question Number : 49 Question Id : 86435130478 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which is not a component of mouldboard plough?

1. Landslide
2. Tail piece
3. Frog
4. Beam

**Options :**

864351106363. 1

864351106364. 2

864351106365. 3

864351106366. 4

**Question Number : 50 Question Id : 86435130479 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is an indicator of the combustion speed of diesel fuel and compression needed for ignition?

1. Cetane Number
2. Octane Number
3. Calorific Value
4. Pre-Ignition

**Options :**

864351106367. 1

864351106368. 2

864351106369. 3

864351106370. 4

**Question Number : 51 Question Id : 86435130480 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Find the weight of air for complete combustion of 10 litres of petrol assuming air contains 22.7% oxygen.

1. 106.10 kg
2. 120 kg
3. 113.67 kg
4. 115.79 kg

**Options :**

864351106371. 1

864351106372. 2

864351106373. 3

864351106374. 4

**Question Number : 52 Question Id : 86435130481 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Who invented two-stroke engine in 1878?

1. Dugald Clark
2. Nikola Tesla
3. Carl Sagan
4. William Henry Bragg

**Options :**

864351106375. 1

864351106376. 2

864351106377. 3

864351106378. 4

**Question Number : 53 Question Id : 86435130482 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What is the degree of crank rotation during the completion of a four-stroke cycle?

1. 90°
2. 279°
3. 180°
4. 360°

**Options :**

864351106379. 1

864351106380. 2

864351106381. 3

864351106382. 4

**Question Number : 54 Question Id : 86435130483 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What is the efficiency of compressed charge engine?

1. 40%
2. 20%
3. 30%
4. 10%

**Options :**

864351106383. 1

864351106384. 2

864351106385. 3

864351106386. 4

**Question Number : 55 Question Id : 86435130484 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

A six-cylinder engine has 130 mm stroke and 109.4 mm bore. The displacement of the engine at a compression ratio is 17:1 is equal to

1. 5.4 litres
2. 7.32 litres
3. 8.27 litres
4. 6.96 litres

**Options :**

864351106387. 1

864351106388. 2

864351106389. 3

864351106390. 4

**Question Number : 56 Question Id : 86435130485 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

How much traction would be generated by the force of 1000N applied by tyre on soil and soil capacity is 2000 N?

1. 3000 N
2. 20000 N
3. 2 N
4. 1000 N

**Options :**

864351106391. 1

864351106392. 2

864351106393. 3

864351106394. 4

**Question Number : 57 Question Id : 86435130486 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

**Inflation pressure in rear wheel of tractor varies between**

1. 0.8-1.5 kg/cm<sup>2</sup>
2. 1.5-2.0 kg/cm<sup>2</sup>
3. 2.0-2.5 kg/cm<sup>2</sup>
4. 2.5-3.0 kg/cm<sup>2</sup>

**Options :**

864351106395. 1

864351106396. 2

864351106397. 3

864351106398. 4

**Question Number : 58 Question Id : 86435130487 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

**In traction, the front wheel acts as**

1. Drive wheel
2. Caster wheel
3. Steered wheel
4. Track wheel

**Options :**

864351106399. 1

864351106400. 2

864351106401. 3

864351106402. 4

**Question Number : 59 Question Id : 86435130488 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The angle between centre line of tyre and vertical line is called

1. Caster angle
2. Camber angle
3. Tilt angle
4. Bearings

**Options :**

864351106403. 1

864351106404. 2

864351106405. 3

864351106406. 4

**Question Number : 60 Question Id : 86435130489 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Range  $2^\circ$  to  $4^\circ$  is of

1. Caster angle
2. Camber angle
3. King pin inclination
4. Slipping

**Options :**

864351106407. 1

864351106408. 2



864351106409. 3

864351106410. 4

**Question Number : 61 Question Id : 86435130490 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The most common type of survey done for small-scale agricultural development works is

1. Cadastral survey
2. Topographic survey
3. Route survey
4. Aerial survey

**Options :**

864351106411. 1

864351106412. 2

864351106413. 3

864351106414. 4

**Question Number : 62 Question Id : 86435130491 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The method of surveying in which fieldwork and plotting are done simultaneously is called

1. Geodetic survey
2. Laying the tiles
3. Plane table survey
4. Cross-staff survey

**Options :**

864351106415. 1

864351106416. 2

864351106417. 3

864351106418. 4

**Question Number : 63 Question Id : 86435130492 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Water saving to the tune \_\_\_\_\_ percent is possible in sprinkler irrigation system.

1. 30 to 50
2. 60 to 65
3. 55 to 85
4. 70 to 80

**Options :**

864351106419. 1

864351106420. 2

864351106421. 3

864351106422. 4

**Question Number : 64 Question Id : 86435130493 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The most suitable device for measuring large flows in earth channels in a canal water distribution system is

1. Parshall flume
2. Broad crested rectangular weir
3. Suppressed rectangular weir
4. Truncated flume

**Options :**

864351106423. 1

864351106424. 2

864351106425. 3

864351106426. 4

**Question Number : 65 Question Id : 86435130494 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The minimum land slope required in land irrigated with surface method of water application is

1. 0.01%
2. 0.10%
3. 0.05%
4. 0.15%

**Options :**

864351106427. 1

864351106428. 2

864351106429. 3

864351106430. 4

**Question Number : 66 Question Id : 86435130495 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The relative proportion of salt, silt and clay determines the soil

1. Structure
2. Type
3. Texture
4. None of these

**Options :**

864351106431. 1

864351106432. 2

864351106433. 3

864351106434. 4

**Question Number : 67 Question Id : 86435130496 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Water logging may occur due to which of the following factors?

1. Over-irrigation
2. Inadequate drainage facilities
3. Seepage of water through canal
4. All of these

**Options :**

864351106435. 1

864351106436. 2

864351106437. 3

864351106438. 4

**Question Number : 68 Question Id : 86435130497 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The actual area irrigated in a year from an outlet is

1. Culturable command area
2. Gross command area
3. Intensity of irrigation
4. All of these

**Options :**

864351106439. 1

864351106440. 2

864351106441. 3

864351106442. 4

**Question Number : 69 Question Id : 86435130498 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The first international drip irrigation meeting was held at \_\_\_\_\_ in 1971.

1. Israel
2. France
3. India
4. USA

**Options :**

864351106443. 1

864351106444. 2

864351106445. 3

864351106446. 4

**Question Number : 70 Question Id : 86435130499 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Globally the maximum area under drip irrigation is in

1. Israel
2. Saudi Arabia
3. USA
4. France

**Options :**

864351106447. 1

864351106448. 2

864351106449. 3

864351106450. 4

**Question Number : 71 Question Id : 86435130500 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

\_\_\_\_\_ is the process of application of water soluble through drip irrigation system.

1. Chemigation
2. Fertigation
3. Chlorination
4. Acidification

**Options :**

864351106451. 1

864351106452. 2

864351106453. 3

864351106454. 4

**Question Number : 72 Question Id : 86435130501 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Wind erosion is more in

1. Cohesive soil
2. Non-cohesive soil
3. Rocky soil
4. All of these

**Options :**

864351106455. 1

864351106456. 2

864351106457. 3

864351106458. 4

**Question Number : 73 Question Id : 86435130502 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

An outlet is said to be proportional if its flexibility is

1. Zero
2. Less than Zero
3. More than Zero
4. One

**Options :**

864351106459. 1

864351106460. 2

864351106461. 3

864351106462. 4

**Question Number : 74 Question Id : 86435130503 Question Type : MCQ Option Shuffling : No  
Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

For a standing crop, the consumptive use of water is equal to the depth of water

1. Transpired by the crop
2. Evaporated by the crop
3. Both (1) and (2)
4. Used by the crop in transpiration, evaporation and also the quantity of water evaporated from adjacent soil

**Options :**

864351106463. 1

864351106464. 2

864351106465. 3

864351106466. 4

**Question Number : 75 Question Id : 86435130504 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Bed bars in a canal are provided

1. To watch the general behavior of canal
2. To measure the discharge
3. To raise the supply level
4. To control the silting

**Options :**

864351106467. 1

864351106468. 2

864351106469. 3

864351106470. 4

**Question Number : 76 Question Id : 86435130505 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Irrigation canals are generally aligned along

1. Ridge line
2. Contour line
3. Valley line
4. Straight line



**Options :**

864351106471. 1

864351106472. 2

864351106473. 3

864351106474. 4

**Question Number : 77 Question Id : 86435130506 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

In a canal syphon, the flow is

1. Under atmospheric pressure
2. Pipe flow
3. With critical velocity
4. Under negative pressure

**Options :**

864351106475. 1

864351106476. 2

864351106477. 3

864351106478. 4

**Question Number : 78 Question Id : 86435130507 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The depth of rice root zone is

1. 50 cm
2. 60 cm
3. 80 cm
4. 90 cm

**Options :**

864351106479. 1

864351106480. 2

864351106481. 3

864351106482. 4

**Question Number : 79 Question Id : 86435130508 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The science of deformation and flow of matter is called

1. Welding
2. Bending
3. Tapping
4. Rheology

**Options :**

864351106483. 1

864351106484. 2

864351106485. 3

864351106486. 4

**Question Number : 80 Question Id : 86435130509 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which fluid is having a constant viscosity dependent on temperature but independent of the applied shear rate?

1. Non-Newtonian
2. Newtonian
3. Dry
4. Wet

**Options :**

864351106487. 1

864351106488. 2

864351106489. 3

864351106490. 4

**Question Number : 81 Question Id : 86435130510 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

A Newtonian fluid is defined as the fluid which

1. Obeys Hook's law
2. Is compressible
3. Obeys Newton's law of viscosity
4. Is incompressible

**Options :**

864351106491. 1

864351106492. 2

864351106493. 3

864351106494. 4

**Question Number : 82 Question Id : 86435130511 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

For non-Newtonian fluids, apparent viscosity is a function of

1. shear rate
2. flow rate
3. viscous rate
4. specific rate

**Options :**

864351106495. 1

864351106496. 2

864351106497. 3

864351106498. 4

**Question Number : 83 Question Id : 86435130512 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Two-stage homogenization may not be applied to which of the following?

1. Products with a high fat content
2. Products where high homogenization efficiency is desired
3. Product with low viscosity
4. Product demanding high viscosity

**Options :**

864351106499. 1

864351106500. 2

864351106501. 3

864351106502. 4

**Question Number : 84 Question Id : 86435130513 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Homogenization has which of the following effects on the physiology of nutrition of milk?

1. Improved digestibility
2. Reduced digestibility
3. Cholesterol
4. Sugar

**Options :**

864351106503. 1

864351106504. 2

864351106505. 3

864351106506. 4

**Question Number : 85 Question Id : 86435130514 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Rate of evaporation is

1. directly proportional to temperature of liquid
2. inversely proportional to temperature of liquid
3. independent of temperature of liquid
4. directly proportional to humidity of surrounding air

**Options :**

864351106507. 1

864351106508. 2

864351106509. 3

864351106510. 4

**Question Number : 86 Question Id : 86435130515 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Evaporators in which pumps are used to force the evaporating liquid through the tubes are called

1. Horizontal tube evaporator
2. Vertical tube evaporator
3. Vacuum pan evaporator
4. Forced circulation evaporator

**Options :**

864351106511. 1

864351106512. 2

864351106513. 3

864351106514. 4

**Question Number : 87 Question Id : 86435130516 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following is not the advantage of falling film evaporator?

1. Short residence time of liquid
2. Good performance with small temperature difference across heating surfaces
3. Operates at lower temperature difference than rising film evaporator
4. Long residence time of liquid

**Options :**

864351106515. 1

864351106516. 2

864351106517. 3

864351106518. 4

**Question Number : 88 Question Id : 86435130517 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

The membrane filtration level with the smallest pore size (0.0001 – 0.001  $\mu\text{m}$ ) is called

1. Micro filtration
2. Reverse osmosis
3. Nano filtration
4. Ultra filtration

**Options :**

864351106519. 1

864351106520. 2

864351106521. 3

864351106522. 4

**Question Number : 89 Question Id : 86435130518 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What is the working principle of triple roller mill?

1. Impact
2. Compression
3. Shear
4. Tear

**Options :**

864351106523. 1

864351106524. 2

864351106525. 3

864351106526. 4

**Question Number : 90 Question Id : 86435130519 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following machines is not used for fine grinding?

1. Jaw crushers
2. Ball mill
3. Hammer mill
4. Attrition mill

**Options :**

864351106527. 1

864351106528. 2

864351106529. 3

864351106530. 4

**Question Number : 91 Question Id : 86435130520 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the following forces acts in attrition mill?

1. Impact and crush
2. Compression and impact
3. Shear and crush
4. Tear and impact

**Options :**

864351106531. 1

864351106532. 2

864351106533. 3

864351106534. 4



**Question Number : 92 Question Id : 86435130521 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What is Kick's law?

1. Amount of energy required to tear the given material
2. Amount of energy required to crush the given material
3. Amount of energy required to compress the given material
4. Amount of energy required to break the given material

**Options :**

864351106535. 1

864351106536. 2

864351106537. 3

864351106538. 4

**Question Number : 93 Question Id : 86435130522 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Which of the laws is used for coarse grinding?

1. Rittinger's Law
2. Kick's Law
3. Bond's Law
4. Bond's Law, Rittinger's Law and Kick's Law

**Options :**

864351106539. 1

864351106540. 2

864351106541. 3

864351106542. 4

**Question Number : 94 Question Id : 86435130523 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

Air Cooled Heat Exchangers are used in

1. oil refineries
2. vehicles
3. food industries
4. dairy industries

**Options :**

864351106543. 1

864351106544. 2

864351106545. 3

864351106546. 4

**Question Number : 95 Question Id : 86435130524 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

What are the examples of indirect heat exchangers?

1. Shell and tube heat exchanger, plate heat exchangers
2. Steam injectors, plate heat exchangers
3. Cooling towers, plate heat exchangers
4. Steam injectors, cooling towers

**Options :**

864351106547. 1

864351106548. 2

864351106549. 3

864351106550. 4

Question Number : 96 Question Id : 86435130525 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

\_\_\_\_\_ is used as rear header in a U-Tube heat exchanger.

1. M type
2. A type
3. U type
4. D type

Options :

864351106551. 1

864351106552. 2

864351106553. 3

864351106554. 4

Question Number : 97 Question Id : 86435130526 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

\_\_\_\_\_ uses an intermediate fluid or solid store to hold heat.

1. Shell and tube heat exchanger
2. Plate heat exchanger
3. Double tube heat exchanger
4. Adiabatic wheel heat exchanger

Options :

864351106555. 1

864351106556. 2

864351106557. 3

864351106558. 4

Question Number : 98 Question Id : 86435130527 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

\_\_\_\_\_ relates the resistance of an organism to differing temperatures.

1.  $F_0$  value
2. Thermal death time
3. D value
4. Z value

Options :

864351106559. 1

864351106560. 2

864351106561. 3

864351106562. 4

Question Number : 99 Question Id : 86435130528 Question Type : MCQ Option Shuffling : No

Is Question Mandatory : No

Correct Marks : 4 Wrong Marks : 1

Which of the following describes the level of microbial destruction obtained by thermal treatment?

1.  $F_0$  value
2. Thermal death time
3. D value
4. Z value

Options :

864351106563. 1

864351106564. 2

864351106565. 3

864351106566. 4

**Question Number : 100 Question Id : 86435130529 Question Type : MCQ Option Shuffling : No**

**Is Question Mandatory : No**

**Correct Marks : 4 Wrong Marks : 1**

\_\_\_\_\_ is the time taken to kill a specific bacterium at a specific temperature.

1.  $F_0$  value
2. Thermal death time
3. D value
4. Z value

**Options :**

864351106567. 1

864351106568. 2

864351106569. 3

864351106570. 4